

SERVICE MANUAL

COLOR TELEVISION

This Service Manual does not include MECHANICAL EXPLODED VIEW and MECHANICAL MAIN PARTS LIST.

These items will be issued in the next Supplement.

SPECIFICATION

Sistemas de recepção de cores:	PAL-M/PAL-N/NTSC com seleção automática ou manual
Recepção de canais (181 canais)	VHF = canais de 2 a 13 UHF = canais de 14 a 69 CATV = canais de 1a 125
Cinescópio (tubo de imagens):	14 polegadas Diagonal visual 33,5 cm (13 ¹ / ₄ polegadas)
Alimentação elétrica (FREE VOLTAGE)	110 a 240V AC - 50/60Hz
Consumo de energia	70 W
Potência acústica:	2,5 W por canal
Peso	9,5 kg
Dimensões (LxAxP):	450 x 320 x 375 mm

- Design and specifications are subject to change without notice.

NOTICES BEFORE REPAIRING

To make the best use of this equipment, make sure to obey the following items when repairing (or mending).

1. Do not damage or melt the tunicate of the leading wire on the AC1 side, including the power supply cord.
2. Do not soil or stain the letters on the spec. inscription plates, notice labels, fuse labels, etc.
3. When repairing the part extracted from the conducted side of the board pattern, fix it firmly with applying bond to the pattern and the part.
4. Restore the following items after repairing.
 - 1) Conditions of soldering of the wires (especially, the distance on the AC1 side).
 - 2) Conditions of wiring, bundling of wires, etc.
 - 3) Types of the wires.
 - 4) Attachment conditions of all types of the insulation.
5. After repairing, always measure the insulation resistance and perform the voltage-withstand test (See Fig-1).
 - 1) The insulation resistance must be 7.0 to 9.5 M when applying 500V per second.
 - 2) In the voltage withstand test, apply 3.0 KV for 1 minute and check that the GO lamp lights.

- * Breaking current set to 10 mA.
- * Connect the safety checker as shown in Fig-1, then measure the resistance and perform the test.
- * Do not touch the equipment during testing.
- * For details of the safety checker, refer to the supplied Operation manual.

Insulation resistance: 7.0 to 9.5 M (500 V/s)
Voltage-withstand: 3.0 KV for 1 minute

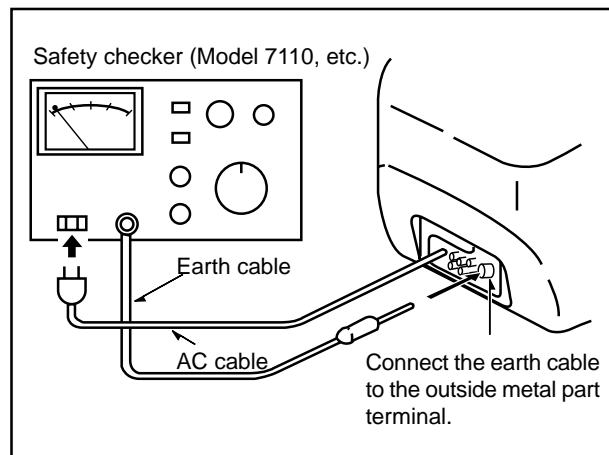


Fig-1

When servicing and checking on the TV, note the followings.

1. Keep the notices
As for the places which need special attentions, they are indicated with the labels or seals on the cabinet, chassis and parts. Make sure to keep the indications and notices in the operation manual.
2. Avoid an electric shock.
There is a high voltage part inside. Avoid an electric shock while the electric current is flowing.
3. Use the designated parts.
The parts in this equipment have the specific characters of incombustibility and withstand voltage for safety.
Therefore, the part which is replaced should be used the part which has the same character. Especially as to the important parts for safety which is indicated in the circuit diagram or the table of parts as a \triangle mark, the designated parts must be used.
4. Put parts and wires in the original position after assembling or wiring.
There are parts which use the insulation material such as a tube or tape for safety, or which are assembled so that these parts do not contact with the printed board. The inside wiring is designed not to get closer to the pyrogenic parts and high voltage parts. Therefore, put these parts in the original positions.
5. Take care of the cathode-ray tube.
By setting an explosion-proof cathode-ray tube is set in this equipment, safety is secured against implosion.
However, when removing it or serving from backward, it is dangerous to give a shock. Take enough care to deal with it.
6. Avoid an X-ray.
Safety is secured against an X-ray by considering about the cathode-ray tube and the high voltage peripheral circuit, etc. Therefore, when repairing the high voltage peripheral circuit, use the designated parts and do not change the circuit. Repairing except indicates causes rising of high voltage, and the cathode-ray tube emits an X-ray.
7. Perform a safety check after servicing.
Confirm that the screws, parts and wiring which were removed in order to service are put in the original positions, or whether there are the portions which are deteriorated around the places serviced.

ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION	REF. NO	PART NO.	KANRI NO.	DESCRIPTION
CAP. CERAMICO				C403	C1-490-547-200		CAP.SMD X7R 4,7KPF/50V K 0805
C410	C1-363-471-600		C.C.D.Y5P/Y5E 470PF>=500V K	C403	C1-494-247-200		CAP.SMD Y5P 4,7KPF/50V K 0805
C417	C1-364-331-795		C.C.D.SL 330PF/2KV K	C405	C1-490-522-200		CAP.SMD X7R 2,2KPF/50V K 0805
C420	C1-363-102-601		C.C.D.Y5P 1KPF>=500V K	C405	C1-494-222-200		CAP.SMD Y5P 2,2KPF/50V K 0805
C421	C1-363-102-601		C.C.D.Y5P 1KPF>=500V K	C406	C1-490-510-200		CAP.SMD X7R 1KPF/50V K 0805
C422	C1-363-102-601		C.C.D.Y5P 1KPF>=500V K	C406	C1-494-210-200		CAP.SMD Y5P 1KPF/50V K 0805
C427	C1-363-222-302		C.C.D.Y5P 2,2KPF>=50V K	C407	C1-490-447-104		CAP.SMD X7R 470PF/50V J 0805
C636	C1-364-104-103		C.C.D.Y5V/Y5U 100KPF>=25V Z	C413	C1-490-522-300		CAP.SMD X7R 22KPF/50V K 0805
C643	C1-364-104-103		C.C.D.Y5V/Y5U 100KPF>=25V Z	C416	C1-265-414-552		CAP.POLYPRO 410KPF/250V J
C717	C1-364-223-202		C.C.D.Y5U 22KPF>=50V Z	C418	C1-265-912-952		CAP.POLYPRO MET.9,1KPF/1600V J
C718	C1-363-102-300		C.C.D.Y5P 1KPF>=50V K	C501	C1-490-410-410		CAP. SMD X7R 100KPF/25V K 805
C724	C1-363-102-300		C.C.D.Y5P 1KPF>=50V K	C501	C1-494-210-410		CAP.SMD Y5P 100KPF/25V K 0805
C734	C1-361-151-303		C.C.D.N220 150PF>=50V K	C502	C1-490-533-200		CAP.SMD X7R 3,3KPF/50V K 0805
C735	C1-361-151-303		C.C.D.N220 150PF>=50V K	C502	C1-494-233-200		CAP.SMD Y5P 3,3KPF/50V K 0805
▲C800	C1-245-102-346		CCD GKO 1KPF/250VAC	C503	C1-490-510-300		CAP.SMD X7R 10KPF/50V K 0805
C802	C1-363-472-803		C.C.D.Y5U 4,7KPF/2KV M (7,5mm)	C504	C1-490-510-300		CAP.SMD X7R 10KPF/50V K 0805
C803	C1-363-472-803		C.C.D.Y5U 4,7KPF/2KV M (7,5mm)	C505	C1-490-510-300		CAP.SMD X7R 10KPF/50V K 0805
C804	C1-363-472-803		C.C.D.Y5U 4,7KPF/2KV M (7,5mm)	C601	C1-490-410-100		CAP.SMD NPO 100PF/50V K 0805
C815	C1-363-221-600		C.C.D.Y5P 220PF>=500V K	C602	C1-490-510-200		CAP.SMD X7R 1KPF/50V K 0805
C816	C1-363-471-600		C.C.D.Y5P/Y5E 470PF>=500V K	C602	C1-494-210-200		CAP.SMD Y5P 1KPF/50V K 0805
C819	C1-244-472-641		C.C.D.Y5P 4,7KPF/1KV K (6LR)	C604	C1-490-433-004		CAP.SMD NPO 33PF/50V J 0805
C820	C1-364-331-795		C.C.D.SL 330PF/2KV K	C605	C1-490-547-303		CAP.SMD X7R 47KPF/25V K 0805
C822	C1-363-102-300		C.C.D.Y5P 1KPF>=50V K	C607	C1-490-410-410		CAP. SMD X7R 100KPF/25V K 805
▲C823	C1-369-222-803		C.C.D.GKO 2K2PF/620 M	C607	C1-494-210-410		CAP.SMD Y5P 100KPF/25V K 0805
C833	C1-363-102-601		C.C.D.Y5P 1KPF>=500V K	C610	C1-490-510-300		CAP.SMD X7R 10KPF/50V K 0805
C843	C1-364-221-795		C.C.D.SL 220PF/1KV K	C613	C1-490-647-405		CAP.SMD Y5V 470KPF/25V Z 0805
C844	C1-364-102-795		C.C.D.R 1KPF/1KV K	C614	C1-490-522-420		CAP.SMD X7R 220KPF/16V K 0805
C845	C1-364-331-795		C.C.D.SL 330PF/2KV K	C614	C1-494-222-420		CAP.SMD Y5P 220KPF/16V K 0805
C901	C1-363-471-600		C.C.D.Y5P/Y5E 470PF>=500V K	C621	C1-490-510-200		CAP.SMD X7R 1KPF/50V K 0805
C904	C1-363-102-803		C.C.D.Y5P 1KPF/2KV K 6LS	C621	C1-494-210-200		CAP.SMD Y5P 1KPF/50V K 0805
C905	C1-363-102-601		C.C.D.Y5P 1KPF>=500V K	C622	C1-490-410-410		CAP. SMD X7R 100KPF/25V K 805
CAP. POLY				C622	C1-494-210-410		CAP.SMD Y5P 100KPF/25V K 0805
C301	C1-331-104-004		C.POLYPRO 100KPF/160V 5%	C624	C1-490-515-300		CAP.SMD X7R 15KPF/50V K 0805
C303	C1-330-224-222		C.POLYMET 220KPF/100V K	C624	C1-494-215-300		CAP.SMD Y5P 15KPF/50V K 0805
C409	C1-330-122-101		C.POLYMET 1,2KPF/100V J	C625	C1-490-510-200		CAP.SMD X7R 1KPF/50V K 0805
C411	C1-330-103-516		C.POLYMET 10KPF/400V K	C625	C1-490-510-200		CAP.SMD X7R 1KPF/50V K 0805
C414	C1-330-122-101		C.POLYMET 1,2KPF/100V J	C625	C1-490-510-200		CAP.SMD X7R 1KPF/50V K 0805
C423	C1-330-104-421		C.POLYMET 100KPF/250V J	C625	C1-494-210-200		CAP.SMD Y5P 1KPF/50V K 0805
C424	C1-330-473-521		C.POLYMET 47KPF/400V K	C629	C1-490-510-300		CAP.SMD X7R 10KPF/50V K 0805
C801	C1-265-104-073		C.POLY.100KPF/250VAC M(SUP.X1)	C631	C1-490-510-200		CAP.SMD X7R 1KPF/50V K 0805
C809	C1-330-273-103		C.POLYMET 27KPF/63V J	C631	C1-494-210-200		CAP.SMD Y5P 1KPF/50V K 0805
C827	C1-330-474-904		C.POLYMET 470KPF/63V K	C633	C1-490-410-410		CAP. SMD X7R 100KPF/25V K 805
C902	C1-330-104-421		C.POLYMET 100KPF/250V J	C633	C1-494-210-410		CAP.SMD Y5P 100KPF/25V K 0805
CAP. SMD				C637	C1-490-510-300		CAP.SMD X7R 10KPF/50V K 0805
C102	C1-490-410-410		CAP. SMD X7R 100KPF/25V K 805	C638	C1-490-510-200		CAP.SMD X7R 1KPF/50V K 0805
C102	C1-494-210-410		CAP.SMD Y5P 100KPF/25V K 0805	C638	C1-494-210-200		CAP.SMD Y5P 1KPF/50V K 0805
C105	C1-490-510-300		CAP.SMD X7R 10KPF/50V K 0805	C640	C1-490-410-410		CAP. SMD X7R 100KPF/25V K 805
C106	C1-490-510-300		CAP.SMD X7R 10KPF/50V K 0805	C640	C1-494-210-410		CAP.SMD Y5P 100KPF/25V K 0805
C108	C1-490-410-100		CAP.SMD NPO 100PF/50V K 0805	C644	C1-490-510-300		CAP.SMD X7R 10KPF/50V K 0805
C109	C1-490-410-100		CAP.SMD NPO 100PF/50V K 0805	C645	C1-490-510-300		CAP.SMD X7R 10KPF/50V K 0805
C203	C1-490-410-410		CAP. SMD X7R 100KPF/25V K 805	C652	C1-490-410-100		CAP.SMD NPO 100PF/50V K 0805
C203	C1-494-210-410		CAP.SMD Y5P 100KPF/25V K 0805	C702	C1-490-415-104		CAP.SMD NPO 150PF/50V J 0805
C205	C1-490-522-300		CAP.SMD X7R 22KPF/50V K 0805	C704	C1-490-415-104		CAP.SMD NPO 150PF/50V J 0805
C206	C1-490-410-410		CAP. SMD X7R 100KPF/25V K 805	C705	C1-490-415-104		CAP.SMD NPO 150PF/50V J 0805
C206	C1-494-210-410		CAP.SMD Y5P 100KPF/25V K 0805	C706	C1-490-415-104		CAP.SMD NPO 150PF/50V J 0805
C208	C1-490-547-303		CAP.SMD X7R 47KPF/25V K 0805	C707	C1-490-415-104		CAP.SMD NPO 150PF/50V J 0805
C209	C1-490-547-303		CAP.SMD X7R 47KPF/25V K 0805	C709	C1-490-433-000		CAP.SMD NPO 33PF/50V K 0805
C210	C1-490-410-410		CAP. SMD X7R 100KPF/25V K 805	C710	C1-490-433-000		CAP.SMD NPO 33PF/50V K 0805
C210	C1-494-210-410		CAP.SMD Y5P 100KPF/25V K 0805	C711	C1-490-433-000		CAP.SMD NPO 33PF/50V K 0805
C211	C1-490-510-300		CAP.SMD X7R 10KPF/50V K 0805	C712	C1-490-433-000		CAP.SMD NPO 33PF/50V K 0805
C216	C1-490-447-000		CAP.SMD NPO 47PF/50V K 0805	C719	C1-490-433-000		CAP.SMD NPO 33PF/50V K 0805
C217	C1-490-447-000		CAP.SMD NPO 47PF/50V K 0805	C721	C1-490-433-000		CAP.SMD NPO 33PF/50V K 0805
C304	C1-490-510-300		CAP.SMD X7R 10KPF/50V K 0805	C722	C1-490-433-000		CAP.SMD NPO 33PF/50V K 0805
C401	C1-490-433-004		CAP.SMD NPO 33PF/50V J 0805	C725	C1-490-447-100		CAP.SMD NPO 470PF/50V K 0805
C402	C1-490-433-004		CAP.SMD NPO 33PF/50V J 0805	C727	C1-490-415-104		CAP.SMD NPO 150PF/50V J 0805
				C728	C1-490-415-104		CAP.SMD NPO 150PF/50V J 0805
				C729	C1-490-410-410		CAP. SMD X7R 100KPF/25V K 805
				C729	C1-494-210-410		CAP.SMD Y5P 100KPF/25V K 0805
				C730	C1-490-447-100		CAP.SMD NPO 470PF/50V K 0805
				C731	C1-490-410-410		CAP. SMD X7R 100KPF/25V K 805
				C731	C1-494-210-410		CAP.SMD Y5P 100KPF/25V K 0805
				C732	C1-490-510-300		CAP.SMD X7R 10KPF/50V K 0805

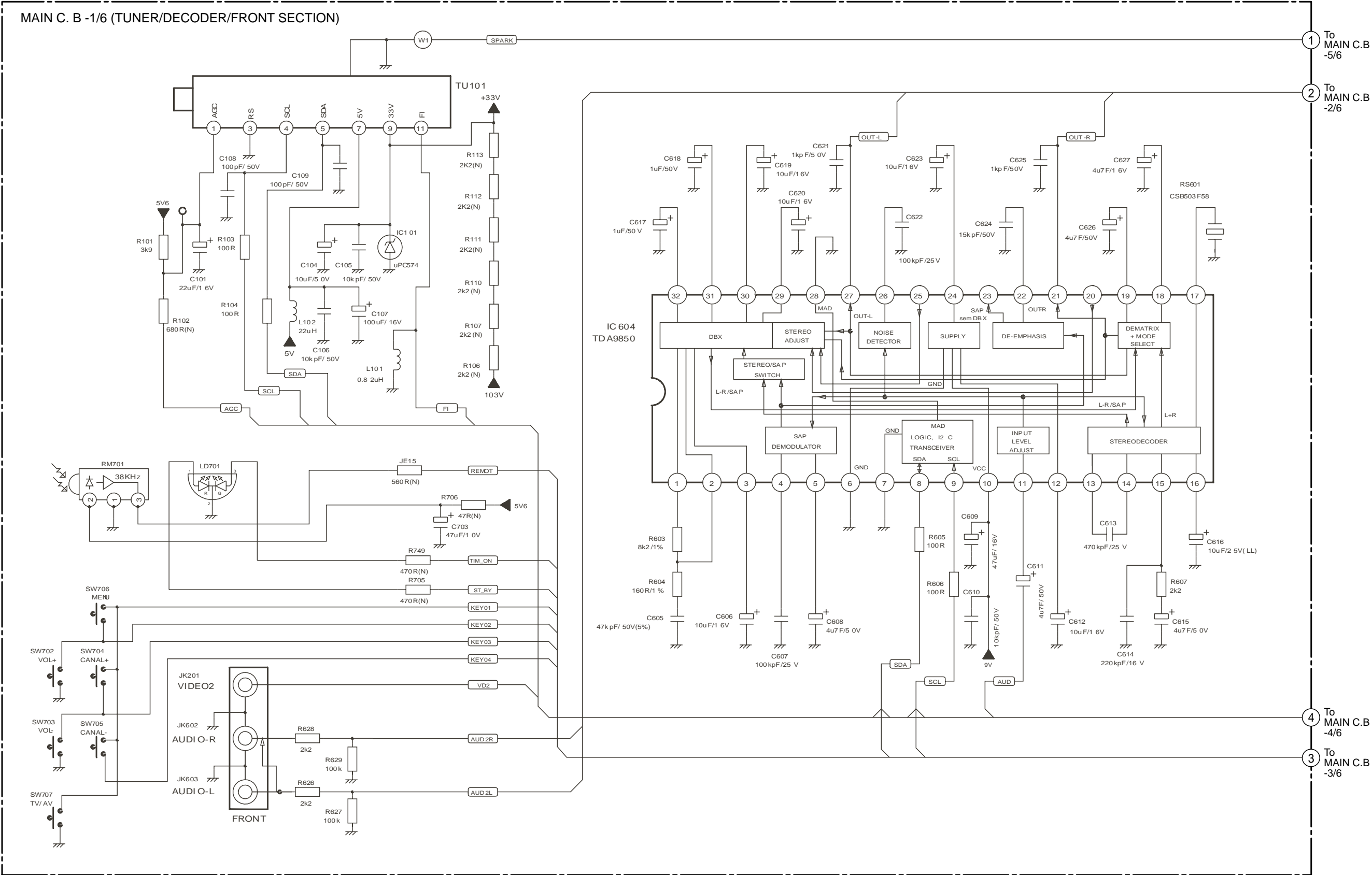
REF. NO	PART NO.	KANRI NO.	DESCRIPTION	REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C808	C1-490-533-200	CAP.SMD X7R 3,3KPF/50V K 0805		C805	C1-292-221-055	ELCO 220UF / 385V (30X30)	
C808	C1-494-233-200	CAP.SMD Y5P 3,3KPF/50V K 0805		C806	C1-380-479-522	ELCO G1 4,7UF/50V M	
C810	C1-490-547-303	CAP.SMD X7R 47KPF/25V K 0805		C807	C1-380-479-522	ELCO G1 4,7UF/50V M	
C811	C1-490-522-200	CAP.SMD X7R 2,2KPF/50V K 0805		C812	C1-380-470-224	ELCO G1 47UF >= 16V M	
C811	C1-494-222-200	CAP.SMD Y5P 2,2KPF/50V K 0805		C825	C1-297-101-934	ELCO 100UF/160V HR	
C813	C1-490-410-410	CAP. SMD X7R 100KPF/25V K 805		C829	C1-297-330-922	ELCO 33UF/160V HR	
C813	C1-494-210-410	CAP.SMD Y5P 100KPF/25V K 0805		C831	C1-297-102-334	ELCO 1000UF/25V HR	
C818	C1-490-522-300	CAP.SMD X7R 22KPF/50V K 0805		C834	C1-380-101-328	ELCO 100UF/25V M	
C824	C1-490-510-200	CAP.SMD X7R 1KPF/50V K 0805		C835	C1-380-470-224	ELCO G1 47UF >= 16V M	
C824	C1-494-210-200	CAP.SMD Y5P 1KPF/50V K 0805		C836	C1-380-101-228	ELCO G1 100UF >= 16V M	
C826	C1-490-410-100	CAP.SMD NPO 100PF/50V K 0805		C838	C1-380-221-231	ELCO 220UF/16V M 6,3X11mm	
C837	C1-490-510-300	CAP.SMD X7R 10KPF/50V K 0805		C839	C1-380-101-228	ELCO G1 100UF >= 16V M	
C841	C1-490-510-300	CAP.SMD X7R 10KPF/50V K 0805		C840	C1-291-102-318	ELCO 1000UF/16V M 10X16	
C847	C1-490-547-420	CAP.SMD X7R 470KPF/16V K 0805		C840	C1-291-102-317	ELCO 1000UF/16V M 10X20	
				C846	C1-380-470-222	ELCO 47UF/16V M	
CAP. ELCO				C903	C1-291-220-017	ELCO 22UF/250V M 12,5X25	
C101	C1-380-220-221	ELCO G1 22UF >= 16V M					
C103	C1-380-478-622	ELCO 0,47UF/100V M		FILTRO			
C104	C1-380-100-524	ELCO 10UF/50V M		CF201	C1-421-506-600	FILTRO CERAMICO TPS4.5MB	
C107	C1-380-101-228	ELCO G1 100UF >= 16V M		CF601	C1-421-507-600	FILTRO CERAMICO SFSH4.5MDB	
C201	C1-380-100-221	ELCO G1 10UF >= 16V M		CF601	C1-421-500-400	FILTRO CERAMICO SFE- 4.5MB	
C204	C1-380-229-622	ELCO 2,2UF/100V M 5x11mm		SF101	C1-421-507-200	FILTRO CERAMICO M1971M	
C207	C1-380-100-221	ELCO G1 10UF >= 16V M					
C212	C1-380-229-622	ELCO 2,2UF/100V M 5x11mm		CONECTOR			
C302	C1-380-101-630	ELCO 100UF/35V M 6,3X11					
C404	C1-380-109-622	ELCO 1UF/100V M					
C412	C1-380-101-228	ELCO G1 100UF >= 16V M		CN401	C1-647-661-800	CABO 18AWG 70MM PR AMARRACAO	
C415	C1-380-479-732	ELCO 4,7UF/160V M		CN401	C1-631-028-304	BASE CONECTORA 04VIAS	
C419	C1-380-109-622	ELCO 1UF/100V M		CN401	C1-647-659-500	CJT.CHICOTE 26AWG 3V 270MM	
C425	C1-380-471-229	ELCO 470UF/16V M		CN501	C1-647-659-600	CABO FLAT 2.54 24AWG 5V 320MM	
C426	C1-380-471-229	ELCO 470UF/16V M		CN601	C1-633-210-660	BASE CONECTORA 4VIAS 180 MIS	
C603	C1-380-100-221	ELCO G1 10UF >= 16V M		CN801	C1-633-212-700	BASE CONECTORA 2VIAS	
C606	C1-380-100-221	ELCO G1 10UF >= 16V M		CN802	C1-633-211-202	BASE CONECTORA 2VIAS	
C608	C1-380-479-522	ELCO G1 4,7UF/50V M		EP601	C1-633-212-500	JACK PHONE STEREO	
C609	C1-380-470-224	ELCO G1 47UF >= 16V M		EP601	C1-633-213-000	JACK PHONE	
C611	C1-380-479-522	ELCO G1 4,7UF/50V M		EP601	C1-633-213-000	JACK PHONE	
C612	C1-380-100-221	ELCO G1 10UF >= 16V M		EP601	C1-633-212-500	JACK PHONE STEREO	
C615	C1-380-479-522	ELCO G1 4,7UF/50V M		JK601	C1-633-212-400	CJT.TOMADA 3RCA HT C/CHAVE	
C616	C1-380-100-525	ELCO 10UF/16V M LL		JK601	C1-633-213-100	CJT.TOMADA 3RCA HT C/CHAVE	
C617	C1-380-109-521	ELCO G1 1UF >= 50V M		JK602	C1-633-212-600	CJT.TOMADA 3RCA HT C/CHAVE	
C618	C1-380-109-521	ELCO G1 1UF >= 50V M			C1-631-281-205	GUIA P/FIOS 05VIAS CINESCOPIO	
C619	C1-380-100-221	ELCO G1 10UF >= 16V M		W1	C1-647-659-700	CABO MONT.1VC/TER.18AWG MR460	
C620	C1-380-100-221	ELCO G1 10UF >= 16V M		W2	C1-641-000-167	CABO MON.1VC/TER.18AWG MR 320	
C623	C1-380-100-221	ELCO G1 10UF >= 16V M		W2	C1-641-000-167	CABO MON.1VC/TER.18AWG MR 320	
C626	C1-380-479-522	ELCO G1 4,7UF/50V M					
C627	C1-380-479-522	ELCO G1 4,7UF/50V M		DIODO			
C628	C1-380-100-221	ELCO G1 10UF >= 16V M		D201	C1-414-621-902	DIODO 1N-4148 75V SINAL	
C630	C1-380-470-224	ELCO G1 47UF >= 16V M		D301	C1-410-430-015	DIODO 1N-4004 RETIFICADOR	
C632	C1-380-478-622	ELCO 0,47UF/100V M		D301	C1-415-172-201	DIODO UF-4004	
C634	C1-380-109-622	ELCO 1UF/100V M		D401	C1-415-161-909	DIODO BYD-33G	
C635	C1-380-221-231	ELCO 220UF/16V M 6,3X11mm		D401	C1-415-167-701	DIODO RAP.PASS.A VIDRO RGP10G	
C639	C1-380-478-622	ELCO 0,47UF/100V M		D401	C1-129-314-199	DIODO SK-4F1/06 RETIFICADOR	
C641	C1-380-109-622	ELCO 1UF/100V M		D402	C1-415-161-909	DIODO BYD-33G	
C642	C1-380-221-231	ELCO 220UF/16V M 6,3X11mm		D402	C1-415-167-701	DIODO RAP.PASS.A VIDRO RGP10G	
C646	C1-291-222-422	ELCO 2200UF/25V M		D402	C1-129-314-199	DIODO SK-4F1/06 RETIFICADOR	
C647	C1-380-109-521	ELCO G1 1UF >= 50V M		D403	C1-415-161-909	DIODO BYD-33G	
C648	C1-380-109-521	ELCO G1 1UF >= 50V M		D403	C1-415-167-701	DIODO RAP.PASS.A VIDRO RGP10G	
C649	C1-380-109-521	ELCO G1 1UF >= 50V M		D403	C1-129-314-199	DIODO SK-4F1/06 RETIFICADOR	
C650	C1-380-109-521	ELCO G1 1UF >= 50V M		D404	C1-415-161-909	DIODO BYD-33G	
C651	C1-380-229-622	ELCO 2,2UF/100V M 5x11mm		D404	C1-415-167-701	DIODO RAP.PASS.A VIDRO RGP10G	
C653	C1-380-229-622	ELCO 2,2UF/100V M 5x11mm		D404	C1-129-314-199	DIODO SK-4F1/06 RETIFICADOR	
C655	C1-380-100-221	ELCO G1 10UF >= 16V M		D405	C1-414-621-902	DIODO 1N-4148 75V SINAL	
C701	C1-380-109-622	ELCO 1UF/100V M		D406	C1-414-621-902	DIODO 1N-4148 75V SINAL	
C703	C1-380-470-922	ELCO 47UF/10V M		D601	C1-410-430-015	DIODO 1N-4004 RETIFICADOR	
C708	C1-380-109-622	ELCO 1UF/100V M		D601	C1-415-172-201	DIODO UF-4004	
C716	C1-380-221-231	ELCO 220UF/16V M 6,3X11mm		D701	C1-414-621-902	DIODO 1N-4148 75V SINAL	
C720	C1-380-101-228	ELCO G1 100UF >= 16V M		D801	C1-414-621-902	DIODO 1N-4148 75V SINAL	
C723	C1-380-100-221	ELCO G1 10UF >= 16V M		D802	C1-414-621-902	DIODO 1N-4148 75V SINAL	
C733	C1-380-478-521	ELCO G1 0,47UF/50V M		D803	C1-414-621-902	DIODO 1N-4148 75V SINAL	

REF. NO	PART NO.	KANRI NO.	DESCRIPTION	REF. NO	PART NO.	KANRI NO.	DESCRIPTION
Q802	C1-139-999-188		TRANSISTOR 2SD2061E/F	R705	C1-183-547-192		RES.METAL FILME 1/2W 470R 5% N
Q801	C1-139-999-351		TRANSISTOR 2SK-2545	R706	C1-183-547-092		RES.METAL FILME 1/2W 47R 5% N
Q804	C1-320-030-402		TRANSISTOR BC-327/16	R711	C1-183-510-192		RES.METAL FILME 1/2W 100R 5% N
Q402	C1-139-999-302		TRANSISTOR BU-2506DX	R712	C1-183-510-192		RES.METAL FILME 1/2W 100R 5% N
Q801	C1-139-999-404		TRANSISTOR MOS FET FL7KM-12A	R713	C1-183-510-192		RES.METAL FILME 1/2W 100R 5% N
Q401	C1-139-608-600		TRANSISTOR MPS-A42	R714	C1-183-510-192		RES.METAL FILME 1/2W 100R 5% N
TRANSISTOR SMD				R715	C1-183-510-192		RES.METAL FILME 1/2W 100R 5% N
Q201	C1-700-100-003		TRANSISTOR SMD BC-847B	R716	C1-183-510-192		RES.METAL FILME 1/2W 100R 5% N
Q202	C1-700-100-003		TRANSISTOR SMD BC-847B	R717	C1-183-510-192		RES.METAL FILME 1/2W 100R 5% N
Q501	C1-700-100-003		TRANSISTOR SMD BC-847B	R720	C1-183-527-292		RES.METAL FILME 1/2W 2,7K 5% N
Q502	C1-700-100-003		TRANSISTOR SMD BC-847B	R721	C1-183-527-292		RES.METAL FILME 1/2W 2,7K 5% N
Q701	C1-700-100-003		TRANSISTOR SMD BC-847B	R722	C1-183-527-292		RES.METAL FILME 1/2W 2,7K 5% N
Q702	C1-700-100-003		TRANSISTOR SMD BC-847B	R728	C1-183-510-192		RES.METAL FILME 1/2W 100R 5% N
Q703	C1-700-100-003		TRANSISTOR SMD BC-847B	R729	C1-183-510-192		RES.METAL FILME 1/2W 100R 5% N
Q704	C1-700-100-003		TRANSISTOR SMD BC-847B	R736	C1-183-510-292		RES.METAL FILME 1/2W 1K 5% N
Q706	C1-700-100-003		TRANSISTOR SMD BC-847B	R737	C1-183-510-292		RES.METAL FILME 1/2W 1K 5% N
Q708	C1-700-100-003		TRANSISTOR SMD BC-847B	R739	C1-183-522-192		RES.METAL FILME 1/2W 220R 5% N
Q803	C1-700-100-003		TRANSISTOR SMD BC-847B	R740	C1-183-533-392		RES.METAL FILME 1/2W 33K 5% N
Q601	C1-700-100-004		TRANSISTOR SMD BC-857B	R743	C1-183-547-292		RES.METAL FILME 1/2W 4,7K 5% N
Q705	C1-700-100-004		TRANSISTOR SMD BC-857B	R745	C1-183-510-292		RES.METAL FILME 1/2W 1K 5% N
Q707	C1-700-100-004		TRANSISTOR SMD BC-857B	R749	C1-183-547-192		RES.METAL FILME 1/2W 470R 5% N
Q709	C1-700-100-004		TRANSISTOR SMD BC-857B	R759	C1-183-547-192		RES.METAL FILME 1/2W 470R 5% N
RESISTOR				R760	C1-183-556-192		RES.METAL FILME 1/2W 560R 5% N
R102	C1-183-568-192		RES.METAL FILME 1/2W 680R 5% N	R761	C1-183-547-292		RES.METAL FILME 1/2W 4,7K 5% N
R106	C1-183-522-292		RES.METAL FILME 1/2W 2,2K 5% N	R762	C1-183-556-192		RES.METAL FILME 1/2W 560R 5% N
R107	C1-183-522-292		RES.METAL FILME 1/2W 2,2K 5% N	R765	C1-183-547-292		RES.METAL FILME 1/2W 4,7K 5% N
R110	C1-183-522-292		RES.METAL FILME 1/2W 2,2K 5% N	R766	C1-183-522-592		RES.METAL FILME 1/2W 2,2M 5% N
R111	C1-183-522-292		RES.METAL FILME 1/2W 2,2K 5% N	R801	C1-184-527-312		RES.METAL FILME 2W 27K 5% N
R112	C1-183-522-292		RES.METAL FILME 1/2W 2,2K 5% N	R804	C1-183-518-292		RES.METAL FILME 1/2W 1,8K 5% N
R113	C1-183-522-292		RES.METAL FILME 1/2W 2,2K 5% N	R810	C1-184-527-812		RES.METAL FILME 2W 0,27R 5% N
R202	C1-183-547-992		RES.METAL FILME 1/2W 4,7R 5% N	R812	C1-184-547-312		RES.METAL FILME 2W 47K 5% N
R207	C1-185-547-145		RES.METAL FILME 1W 470R 5%	R813	C1-183-568-392		RES.METAL FILME 1/2W 68K 5% N
R208	C1-183-527-392		RES.METAL FILME 1/2W 27K 5% N	R814	C1-183-515-192		RES.METAL FILME 1/2W 150R 5% N
R209	C1-183-527-392		RES.METAL FILME 1/2W 27K 5% N	R815	C1-183-568-548		RES.METAL GLAZED 6,8M
R210	C1-183-522-292		RES.METAL FILME 1/2W 2,2K 5% N	R816	C1-189-111-331		RES.PRECISAO 0,6W 113K 0,5%
R215	C1-183-547-192		RES.METAL FILME 1/2W 470R 5% N	R817	C1-189-128-231		RES.PRECISAO 0,6W 2,8K 0,5%
R301	C1-189-139-331		RES.PRECISAO 0,4W 39K 1% N	R820	C1-185-547-145		RES.METAL FILME 1W 470R 5%
R302	C1-183-510-192		RES.METAL FILME 1/2W 100R 5% N	R821	C1-187-533-040		RES.METAL FILME 3W 33R 5% N
R303	C1-183-510-192		RES.METAL FILME 1/2W 100R 5% N	R823	C1-185-510-245		RES.METAL FILME 1W 1K 5%
R304	C1-183-515-292		RES.METAL FILME 1/2W 1,5K 5% N	R824	C1-183-533-992		RES.METAL FILME 1/2W 3,3R 5% N
R305	C1-183-515-292		RES.METAL FILME 1/2W 1,5K 5% N	R825	C1-183-510-092		RES.METAL FILME 1/2W 10R 5% N
R307	C1-183-533-192		RES.METAL FILME 1/2W 330R 5% N	R826	C1-183-510-392		RES.METAL FILME 1/2W 10K 5% N
R308	C1-185-533-912		RES.M.FILME 1W 3,3R 5% N	R827	C1-174-051-025		RES.FIO 5W 1K 5% V-SQM
R309	C1-185-533-912		RES.M.FILME 1W 3,3R 5% N	R828	C1-183-518-292		RES.METAL FILME 1/2W 1,8K 5% N
R408	C1-183-539-192		RES.METAL FILME 1/2W 390R 5% N	R829	C1-183-518-292		RES.METAL FILME 1/2W 1,8K 5% N
R410	C1-183-556-292		RES.METAL FILME 1/2W 5,6K 5% N	R830	C1-183-518-292		RES.METAL FILME 1/2W 1,8K 5% N
R411	C1-187-547-212		RES.METAL FILME 3W 4,7K 5% N	R831	C1-183-510-392		RES.METAL FILME 1/2W 10K 5% N
R412	C1-183-522-992		RES.METAL FILME 1/2W 2,2R 5% N	R901	C1-183-510-192		RES.METAL FILME 1/2W 100R 5% N
R413	C1-183-556-392		RES.METAL FILME 1/2W 56K 5% N	R902	C1-183-510-192		RES.METAL FILME 1/2W 100R 5% N
R414	C1-183-515-392		RES.METAL FILME 1/2W 15K 5% N	R903	C1-183-510-192		RES.METAL FILME 1/2W 100R 5% N
R415	C1-185-515-345		RES.METAL FILME 1W 15K 5%	R904	C1-183-615-219		RES.COMPOS.1/2W 1,5K 5% N
R416	C1-183-547-092		RES.METAL FILME 1/2W 47R 5% N	R905	C1-183-615-219		RES.COMPOS.1/2W 1,5K 5% N
R504	C1-183-522-392		RES.METAL FILME 1/2W 22K 5% N	R906	C1-183-615-219		RES.COMPOS.1/2W 1,5K 5% N
R506	C1-183-522-392		RES.METAL FILME 1/2W 22K 5% N	R907	C1-183-510-292		RES.METAL FILME 1/2W 1K 5% N
R507	C1-183-510-292		RES.METAL FILME 1/2W 1K 5% N	RES.SMD			
R508	C1-183-522-192		RES.METAL FILME 1/2W 220R 5% N	R101	C1-502-539-202		RES.SMD 3,9K 0805
R509	C1-183-522-192		RES.METAL FILME 1/2W 220R 5% N	R103	C1-502-510-102		RES.SMD 100R 5% 0805
R510	C1-183-522-192		RES.METAL FILME 1/2W 220R 5% N	R104	C1-502-510-102		RES.SMD 100R 5% 0805
R608	C1-183-522-292		RES.METAL FILME 1/2W 2,2K 5% N	R105	C1-502-556-102		RES.SMD 560R 5% N 0805
R616	C1-183-522-492		RES.METAL FILME 1/2W 220K 5% N	R201	C1-502-510-202		RES.SMD 1K 5% 0805
R617	C1-185-515-145		RES.METAL FILME 1W 150R 5%	R203	C1-502-518-102		RES.SMD 180R 5% 0805
R619	C1-185-515-145		RES.METAL FILME 1W 150R 5%	R204	C1-502-518-102		RES.SMD 180R 5% 0805
R620	C1-183-522-492		RES.METAL FILME 1/2W 220K 5% N	R205	C1-502-510-002		RES.SMD 10R 5% 0805
R624	C1-183-522-292		RES.METAL FILME 1/2W 2,2K 5% N	R206	C1-502-512-202		RES.SMD 1,2K 5% 0805
R702	C1-183-510-192		RES.METAL FILME 1/2W 100R 5% N	R211	C1-502-510-102		RES.SMD 100R 5% 0805
R704	C1-183-533-392		RES.METAL FILME 1/2W 33K 5% N				

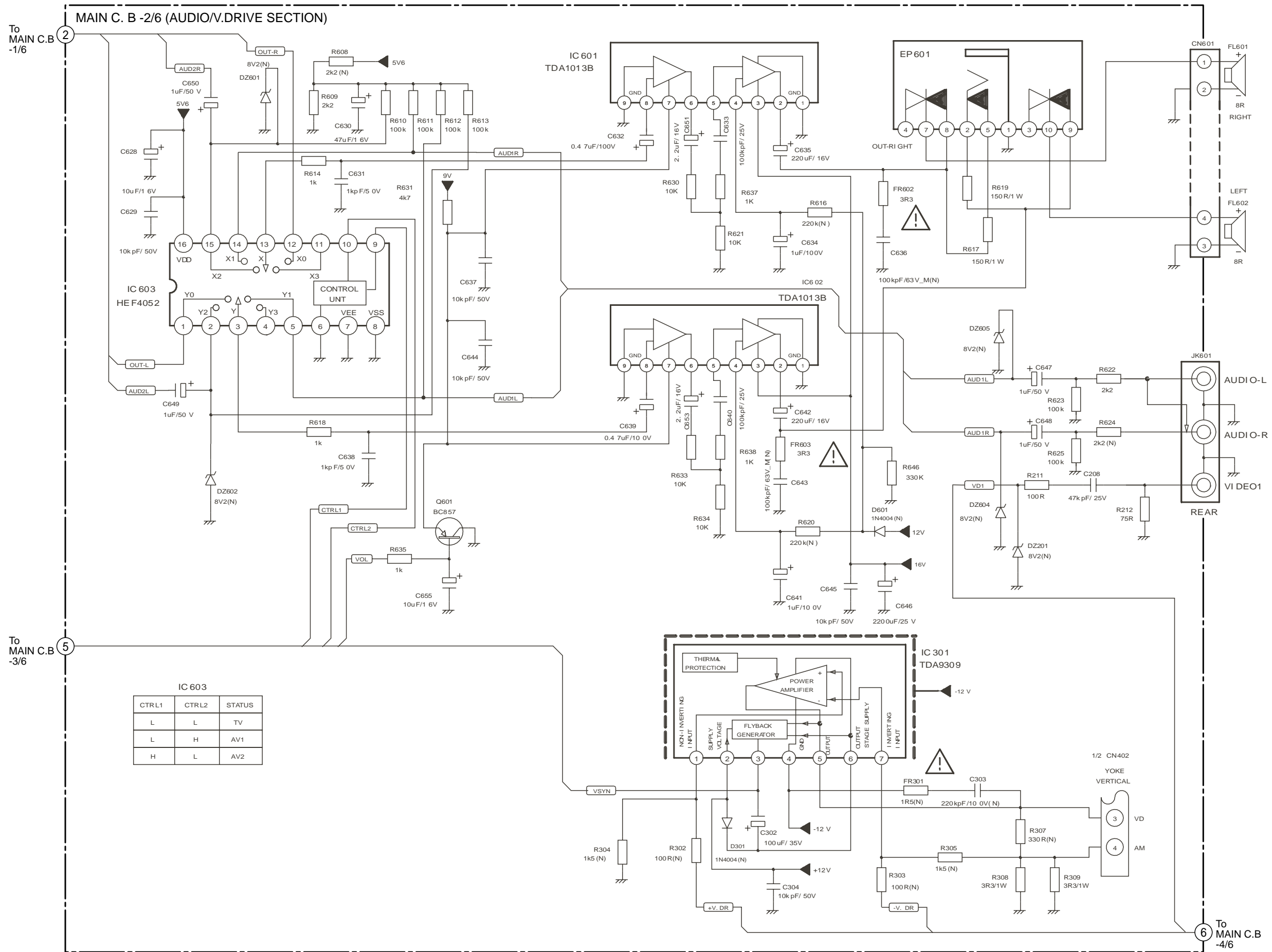
REF. NO	PART NO.	KANRI NO.	DESCRIPTION
R212	C1-502-575-002	RES.SMD	75R 5% 0805
R213	C1-502-510-102	RES.SMD	100R 5% 0805
R216	C1-502-533-102	RES.SMD	330R 5% 0805
R218	C1-502-547-102	RES.SMD	470R 5% 0805
R219	C1-502-575-002	RES.SMD	75R 5% 0805
R228	C1-502-522-502	RES.SMD	2,2M 5% 0805
R401	C1-502-510-102	RES.SMD	100R 5% 0805
R402	C1-502-510-102	RES.SMD	100R 5% 0805
R403	C1-502-518-302	RES.SMD	18K 5% 0805
R404	C1-502-527-302	RES.SMD	27K 5% 0805
R405	C1-502-515-202	RES.SMD	1,5K 5% 0805
R406	C1-502-547-202	RES.SMD	4,7K 5% 0805
R407	C1-502-547-202	RES.SMD	4,7K 5% 0805
R409	C1-502-533-102	RES.SMD	330R 5% 0805
R418	C1-502-527-302	RES.SMD	27K 5% 0805
R502	C1-502-510-402	RES.SMD	100K 5% 0805
R503	C1-502-547-302	RES.SMD	47K 5% 0805
R505	C1-502-547-302	RES.SMD	47K 5% 0805
R601	C1-502-510-102	RES.SMD	100R 5% 0805
R602	C1-502-512-202	RES.SMD	1,2K 5% 0805
R603	C1-502-182-202	RES.SMD	8,2K 1% 0805
R604	C1-502-116-102	RES.SMD	160R 1% 0805
R605	C1-502-510-102	RES.SMD	100R 5% 0805
R606	C1-502-510-102	RES.SMD	100R 5% 0805
R607	C1-502-522-202	RES.SMD	2,2K 5% 0805
R609	C1-502-522-202	RES.SMD	2,2K 5% 0805
R610	C1-502-510-402	RES.SMD	100K 5% 0805
R611	C1-502-510-402	RES.SMD	100K 5% 0805
R612	C1-502-510-402	RES.SMD	100K 5% 0805
R613	C1-502-510-402	RES.SMD	100K 5% 0805
R614	C1-502-510-202	RES.SMD	1K 5% 0805
R618	C1-502-510-202	RES.SMD	1K 5% 0805
R621	C1-502-510-302	RES.SMD	10K 5% 0805
R622	C1-502-522-202	RES.SMD	2,2K 5% 0805
R623	C1-502-510-402	RES.SMD	100K 5% 0805
R625	C1-502-510-402	RES.SMD	100K 5% 0805
R626	C1-502-522-202	RES.SMD	2,2K 5% 0805
R627	C1-502-510-402	RES.SMD	100K 5% 0805
R628	C1-502-522-202	RES.SMD	2,2K 5% 0805
R629	C1-502-510-402	RES.SMD	100K 5% 0805
R630	C1-502-510-302	RES.SMD	10K 5% 0805
R631	C1-502-547-202	RES.SMD	4,7K 5% 0805
R633	C1-502-510-302	RES.SMD	10K 5% 0805
R634	C1-502-510-302	RES.SMD	10K 5% 0805
R635	C1-502-510-202	RES.SMD	1K 5% 0805
R637	C1-502-510-202	RES.SMD	1K 5% 0805
R638	C1-502-510-202	RES.SMD	1K 5% 0805
R646	C1-502-533-402	RES.SMD	330K 5% 0805
R701	C1-502-510-302	RES.SMD	10K 5% 0805
R707	C1-502-547-202	RES.SMD	4,7K 5% 0805
R708	C1-502-547-202	RES.SMD	4,7K 5% 0805
R709	C1-502-547-202	RES.SMD	4,7K 5% 0805
R710	C1-502-547-202	RES.SMD	4,7K 5% 0805
R718	C1-502-522-202	RES.SMD	2,2K 5% 0805
R719	C1-502-522-202	RES.SMD	2,2K 5% 0805
R726	C1-502-547-202	RES.SMD	4,7K 5% 0805
R727	C1-502-547-202	RES.SMD	4,7K 5% 0805
R730	C1-502-547-502	RES.SMD	4,7M 5% 0805
R731	C1-502-547-202	RES.SMD	4,7K 5% 0805
R732	C1-502-547-202	RES.SMD	4,7K 5% 0805
R734	C1-502-547-202	RES.SMD	4,7K 5% 0805
R735	C1-502-547-202	RES.SMD	4,7K 5% 0805
R741	C1-502-522-202	RES.SMD	2,2K 5% 0805
R744	C1-502-547-202	RES.SMD	4,7K 5% 0805
R747	C1-502-510-302	RES.SMD	10K 5% 0805
R748	C1-502-510-302	RES.SMD	10K 5% 0805
R751	C1-502-510-202	RES.SMD	1K 5% 0805
R753	C1-502-533-402	RES.SMD	330K 5% 0805
R754	C1-502-510-302	RES.SMD	10K 5% 0805
R755	C1-502-522-302	RES.SMD	22K 5% 0805

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
R756	C1-502-510-202	RES.SMD	1K 5% 0805
R757	C1-502-547-202	RES.SMD	4,7K 5% 0805
R802	C1-502-515-202	RES.SMD	1,5K 5% 0805
R803	C1-502-522-202	RES.SMD	2,2K 5% 0805
R805	C1-502-533-302	RES.SMD	33K 5% 0805
R806	C1-502-510-502	RES.SMD	1M 5% 0805
R807	C1-502-518-202	RES.SMD	1,8K 5% 0805
R808	C1-502-522-102	RES.SMD	220R 5% 0805
R809	C1-502-518-102	RES.SMD	180R 5% 0805
R818	C1-502-547-302	RES.SMD	47K 5% 0805
R819	C1-502-510-202	RES.SMD	1K 5% 0805
MODULO			
RM701	C1-271-205-400		RECEPTOR IR SBX1981-72P
CHAVE			
SW701	C1-449-009-400		CHAVE DE TOQUE 7,0MM 260g
SW701	C1-449-009-200		CHAVE DE TOQUE 7,0MM 260g
SW702	C1-449-009-400		CHAVE DE TOQUE 7,0MM 260g
SW702	C1-449-009-200		CHAVE DE TOQUE 7,0MM 260g
SW703	C1-449-009-400		CHAVE DE TOQUE 7,0MM 260g
SW703	C1-449-009-200		CHAVE DE TOQUE 7,0MM 260g
SW704	C1-449-009-400		CHAVE DE TOQUE 7,0MM 260g
SW704	C1-449-009-200		CHAVE DE TOQUE 7,0MM 260g
SW705	C1-449-009-400		CHAVE DE TOQUE 7,0MM 260g
SW705	C1-449-009-200		CHAVE DE TOQUE 7,0MM 260g
SW706	C1-449-009-400		CHAVE DE TOQUE 7,0MM 260g
SW706	C1-449-009-200		CHAVE DE TOQUE 7,0MM 260g
SW801	C1-440-090-053		CHAVE POWER
TRAFO			
T401	C1-353-101-200		TRAFO DRIVE HT
T402	C1-355-215-800		TRAFO FLY BACK 14"KFT2AA293X
T801	C1-356-005-600		TRAFO CHAVEAMENTO
SINTONIZADOR			
TU101	C1-271-503-800		SINTONIZADOR 181CH UV-1336S/AF
TU101	C1-271-503-500		SINTONIZADOR IIC 5V ENV56D33G3
PEPCI CINESCOPIO			
V901	C1-408-010-300		CJT.CINESCOPIO S/CHICOTE
	C1-027-221-802		CJT.PCI MANUAL/MONT CINESCOPIO
	C1-027-221-822		CJT.PCI SMD CINESCOPIO
	C1-027-221-812		CJT.PCI AUTOMATICO CINESCOPIO
	C1-107-221-802		PEPCI CINESCOPIO 9PECAS
	C1-682-021-400		MOLA DO ATERRAMENTO DO CRT
CONECTOR			
	C1-638-100-912		SOQUETE P/CINESCOPIO 1SMS11S
CRISTAL			
RS601	C1-421-506-100		RESSONADOR CERAMICO CSB-503F58
X501	C1-425-009-200		CRISTAL NTSC 3.579545 SE / S
X502	C1-425-009-100		CRISTAL PAL-M 3.575611 SSP / S
X503	C1-425-009-300		CRISTAL PAL-N 3.582056 SSP / S
X701	C1-425-011-400		CRISTAL 32,768KHZ
PEPCI PRINCIPAL			
	C1-027-221-801		CJT.PCI MAN/MONT PRINCIPAL
	C1-027-221-821		CJT.PCI SMD PRINCIPAL
	C1-027-221-811		CJT.PCI AUTOMATICO PRINCIPAL
	C1-107-221-801		PCI PRINCIPAL

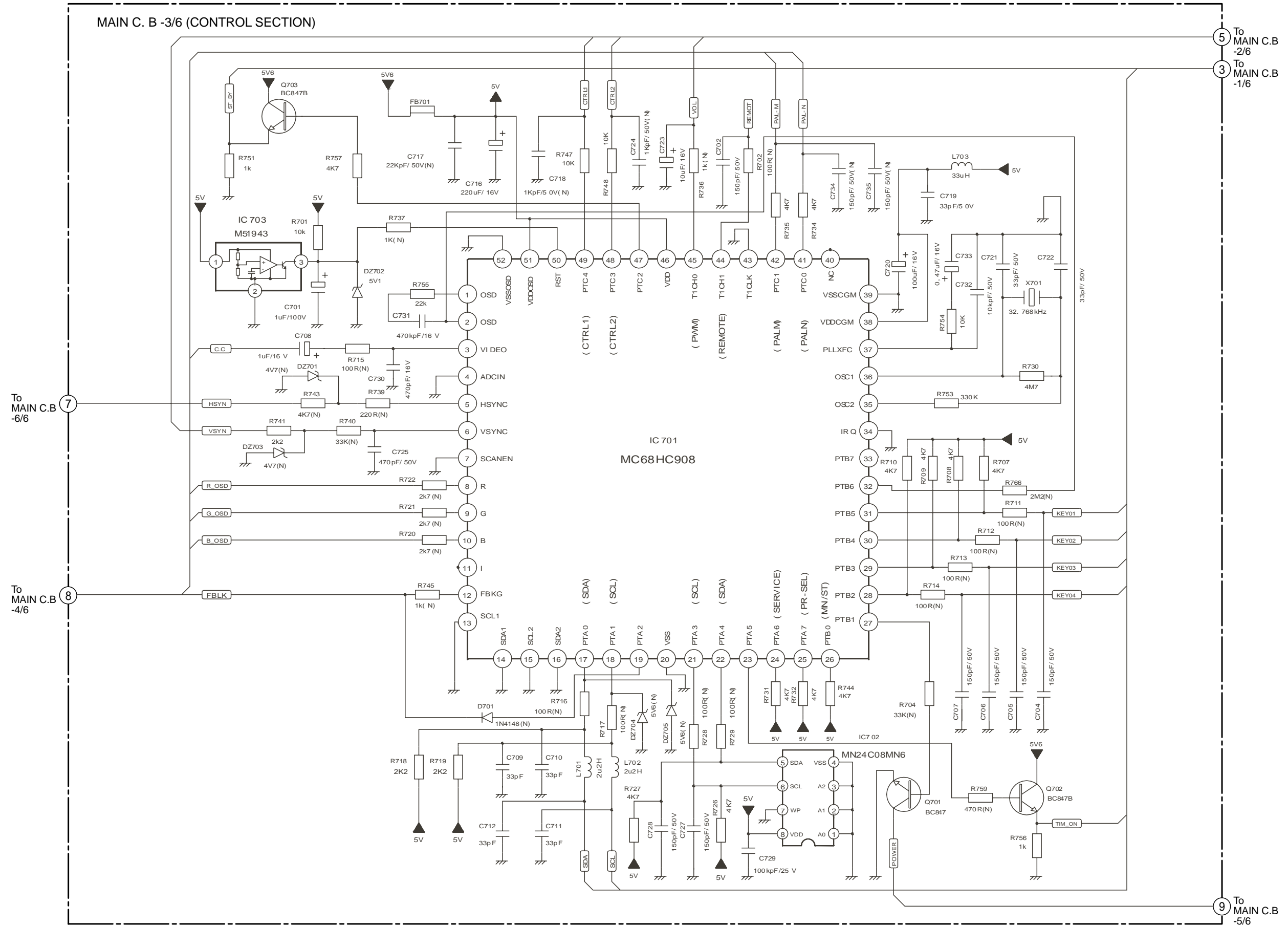
REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C1-644-505-100			CABO DE FORCA 2X18X2 C/CONECT
C1-437-203-201			ANTENA TELESCOPICA
C1-437-203-202			ANTENA TELESCOPICA
C1-437-203-203			ANTENA TELESCOPICA 4SECOES
C1-437-203-204			ANTENA TELESCOPICA 3SECOES
C1-437-203-205			ANTENA TELESCOPICA 4SECOES
C1-437-203-206			ANTENA TELESCOPICA 5SECOES
C1-437-203-207			ANTENA TELESCOPICA 4SECOES
C1-633-206-000			CONVERSOR IMPEDANCIA CRF-07/A
C1-027-218-580			CONTROLE REMOTO MONTADO



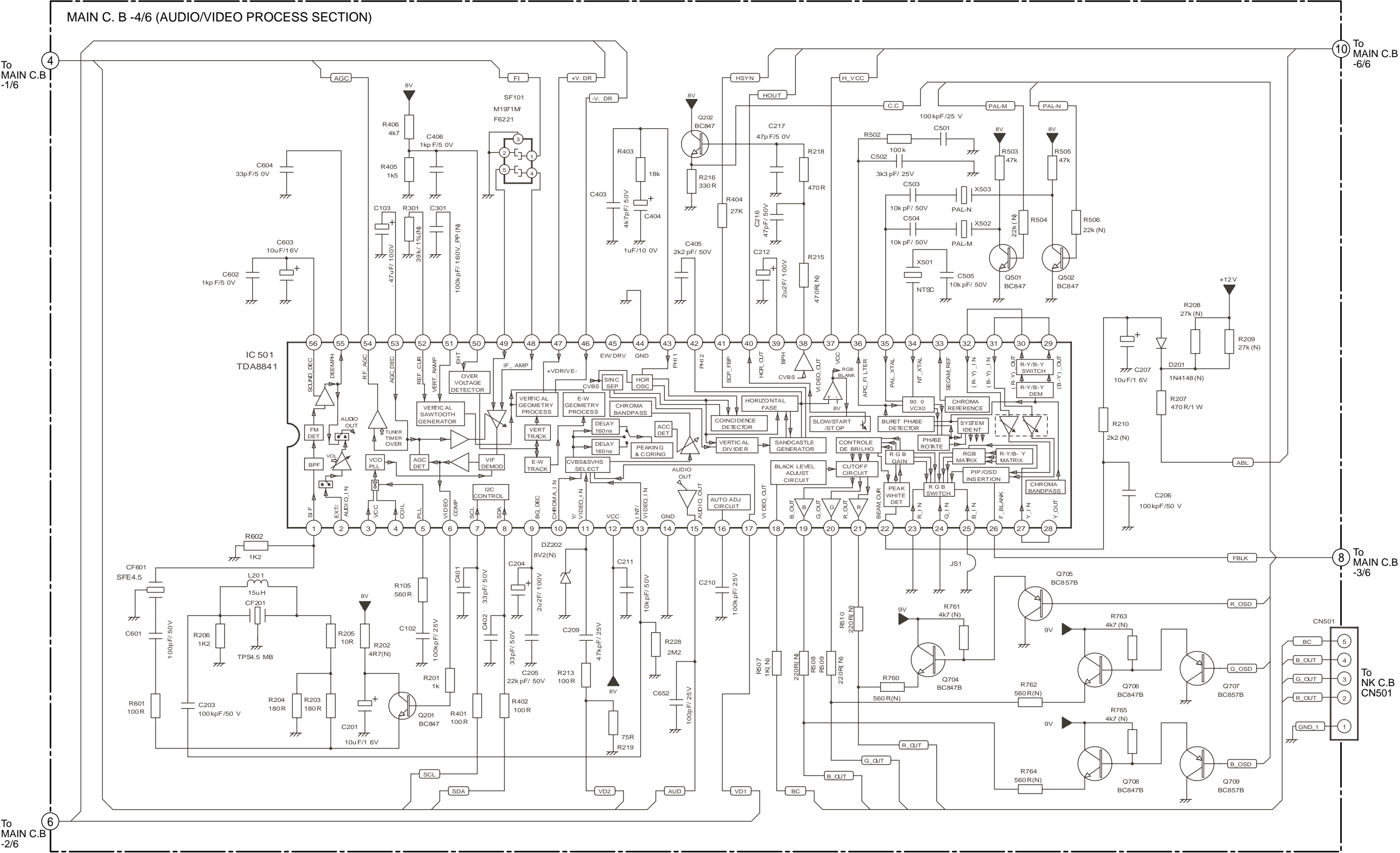
SCHEMATIC DIAGRAM-2 (MAIN C.B-2/6)



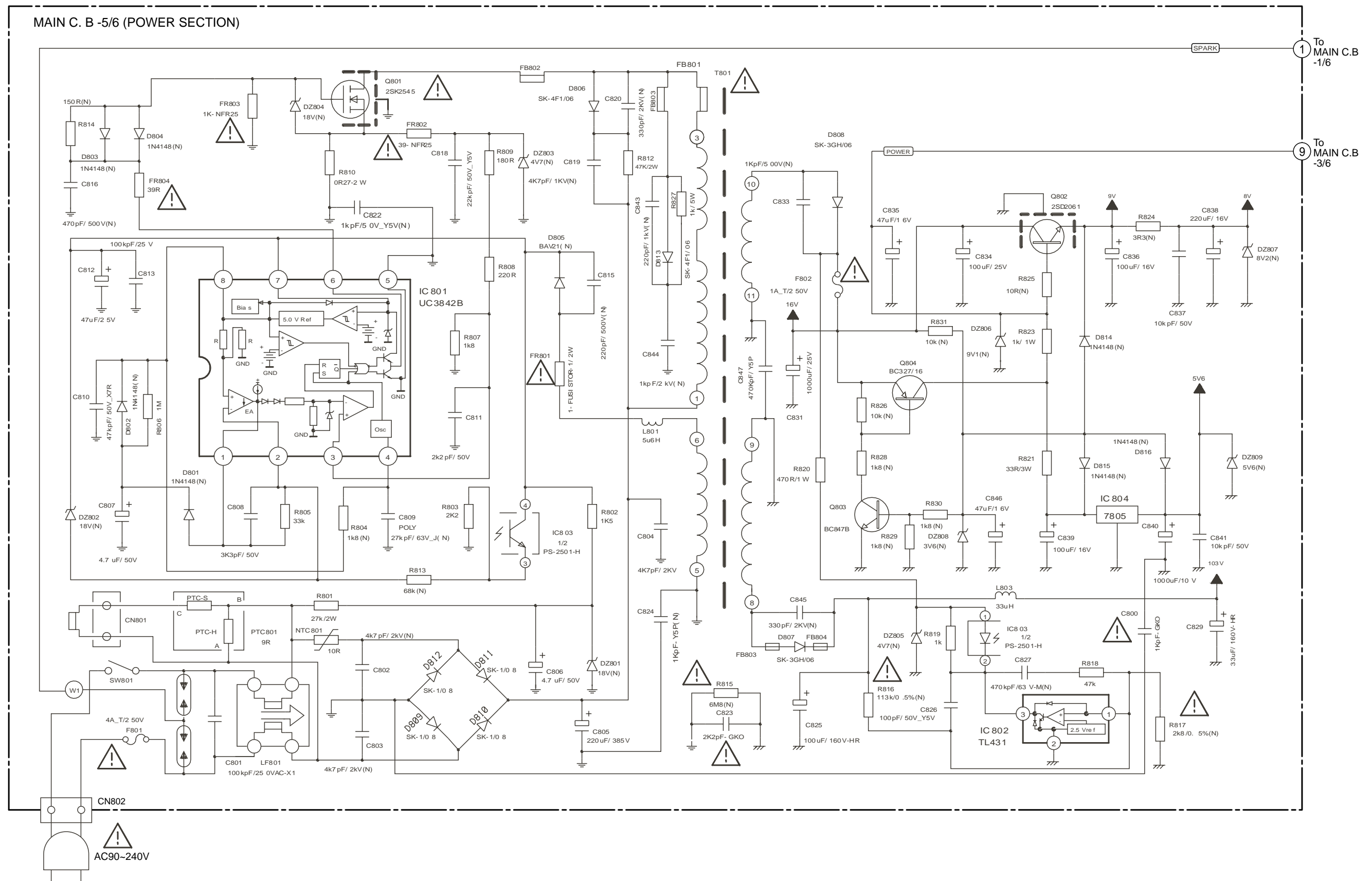
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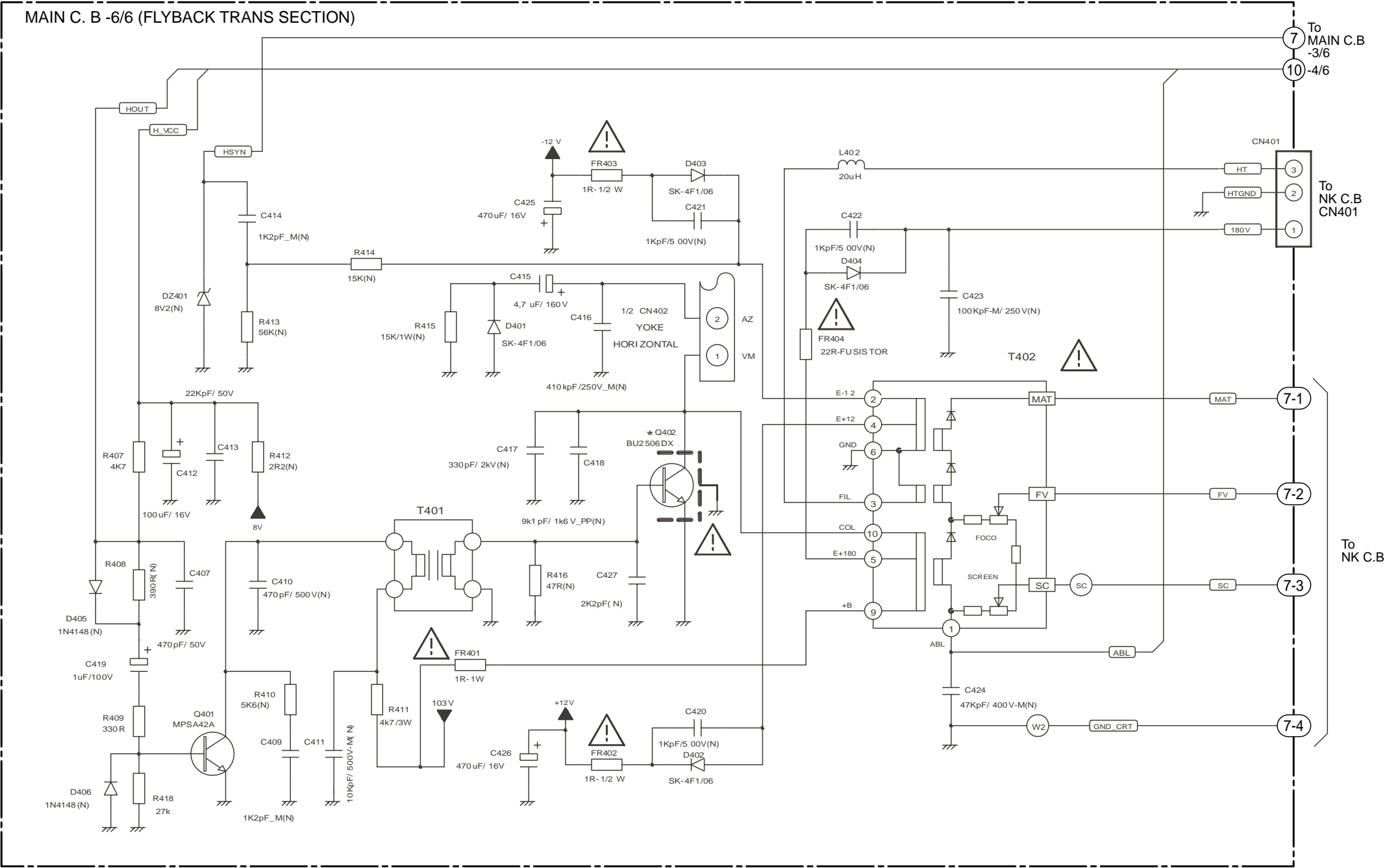


SCHEMATIC DIAGRAM-4 (MAIN C.B-4/6)

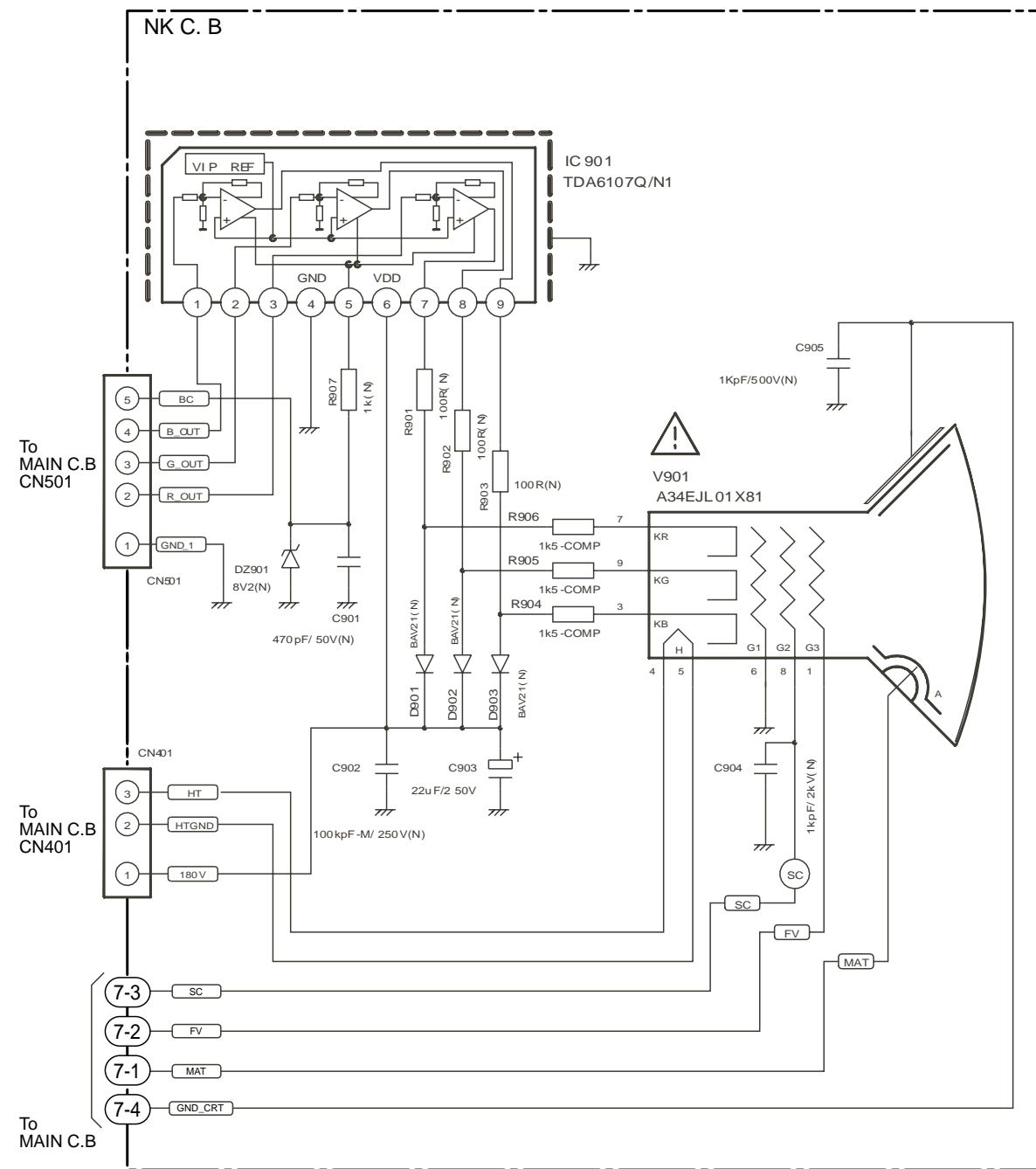


SCHEMATIC DIAGRAM-5 (MAIN C.B-5/6)

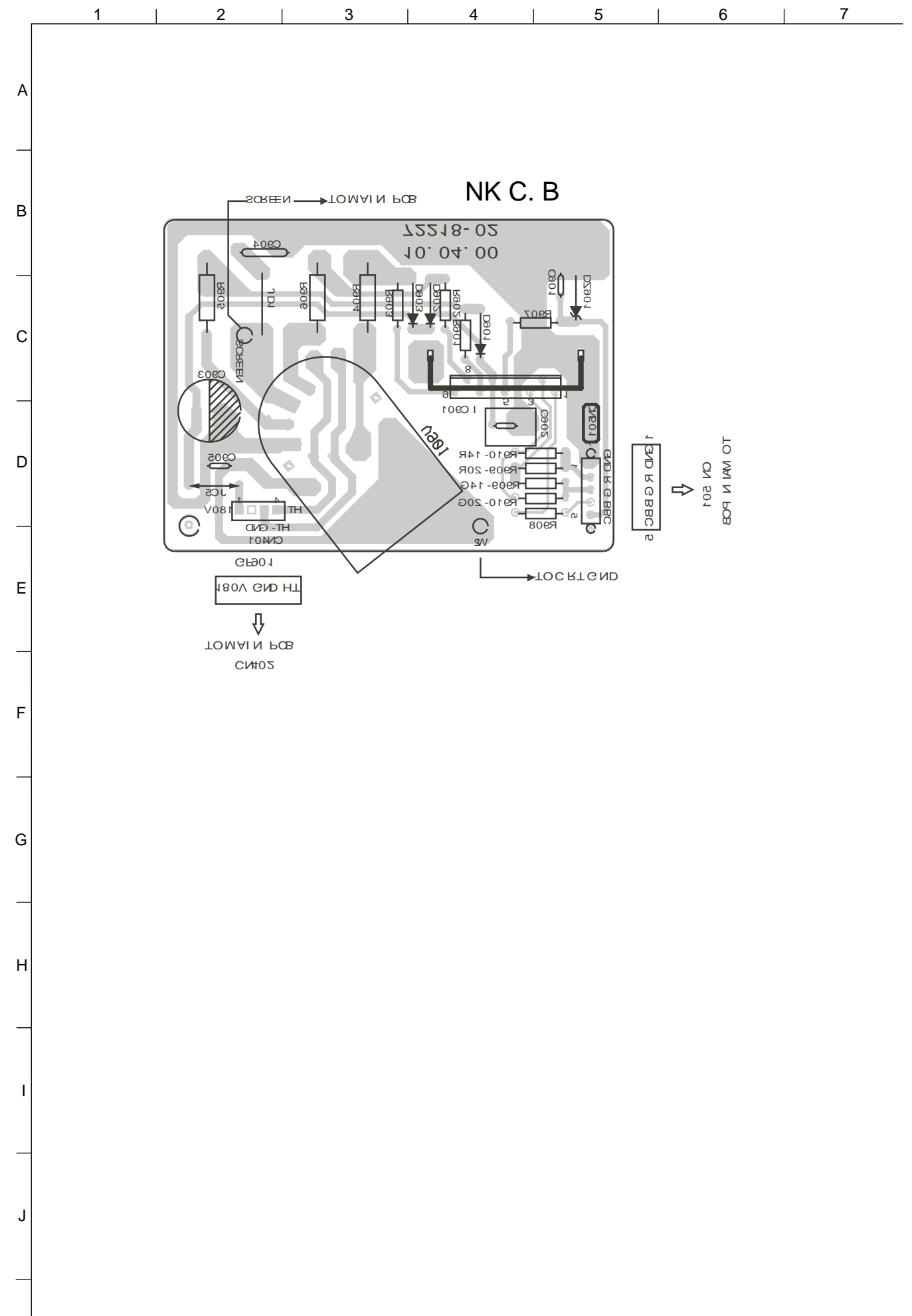




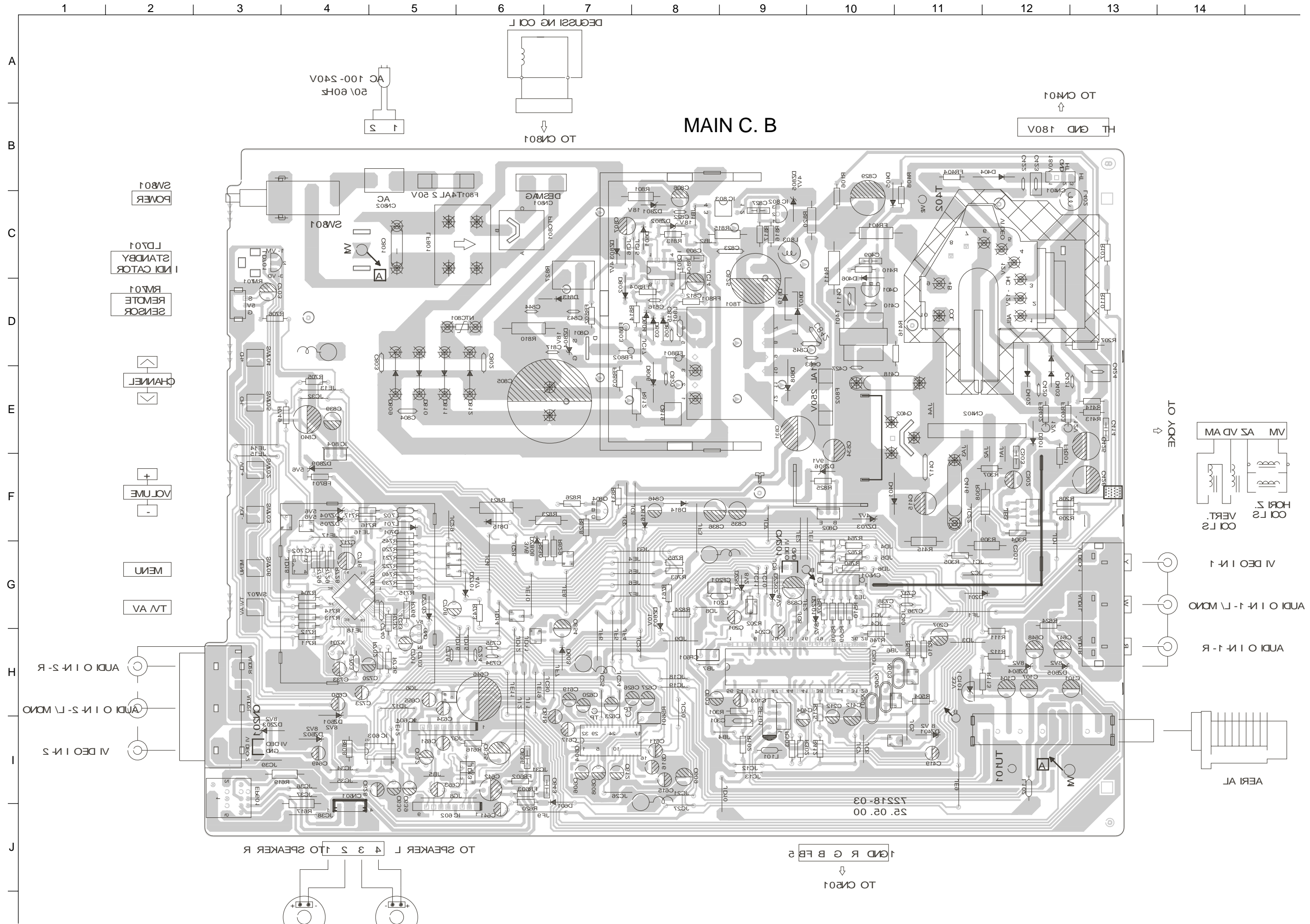
SCHEMATIC DIAGRAM-7 (NK C.B)



WIRING-1 (NK C.B)



WIRING-2 (MAIN C.B)



WAVEFORM

CONDITIONS:

- 1- TV MODE

2- RF INPUT

3- SOUND

4-MANIS

5- PICTURE

6- RUN TIME
- TV

CH 3 90dB

MONO

VOL. MIN.

127V 60Hz

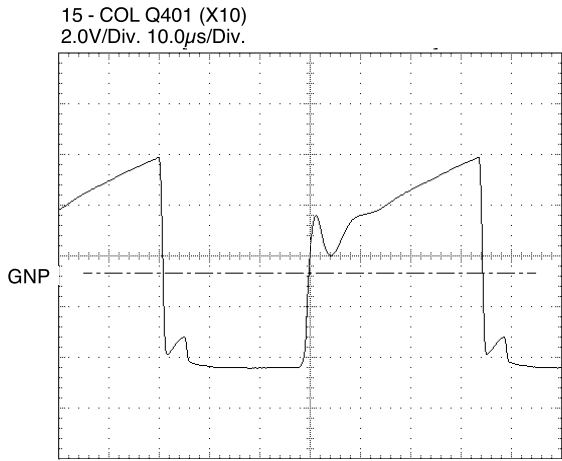
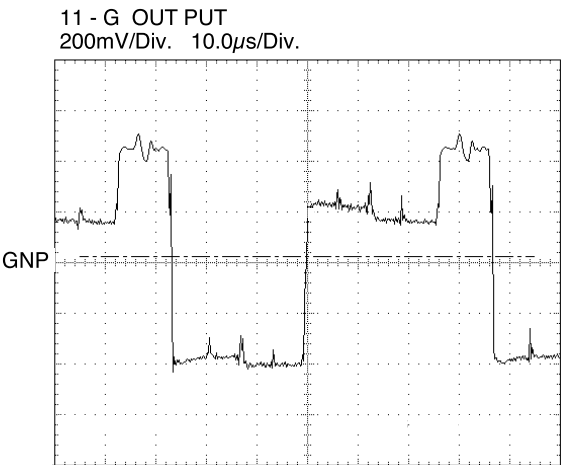
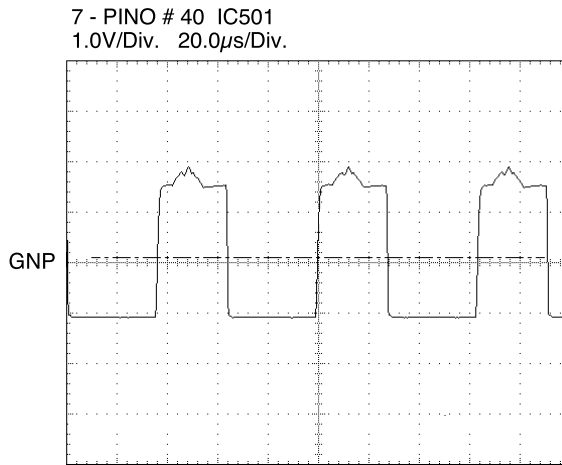
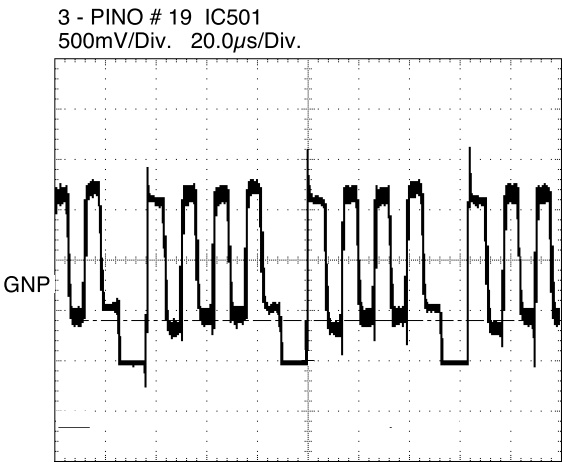
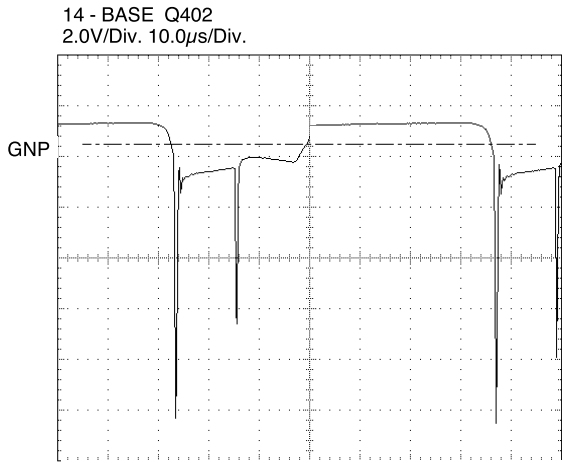
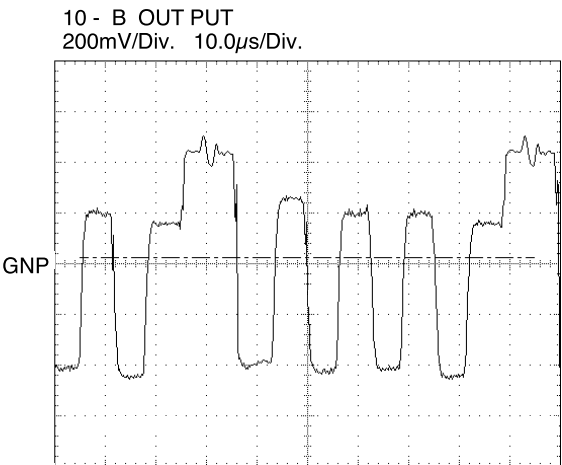
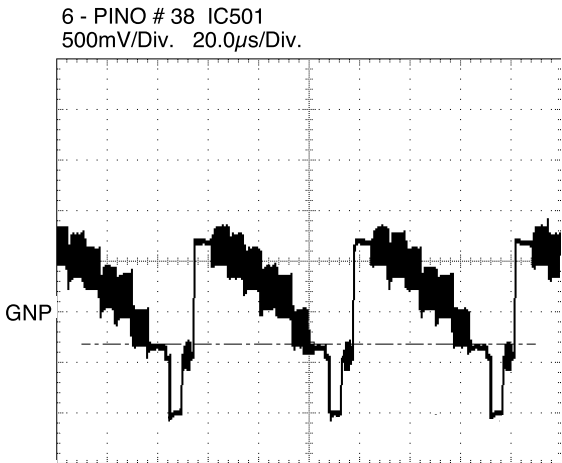
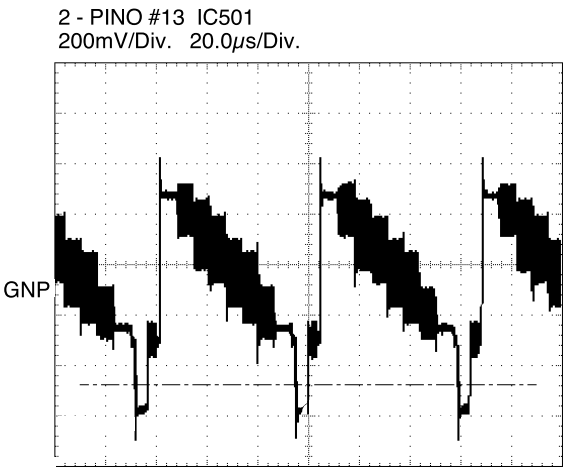
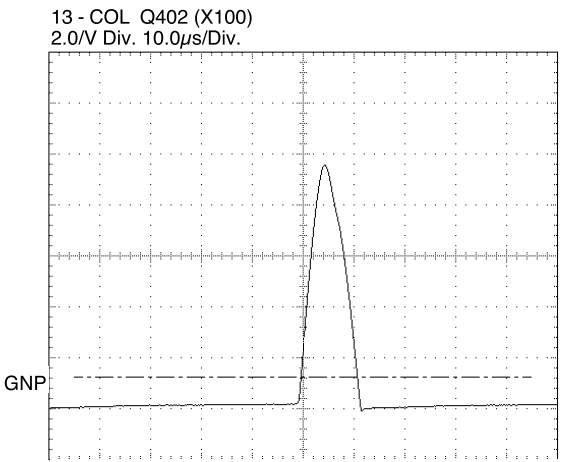
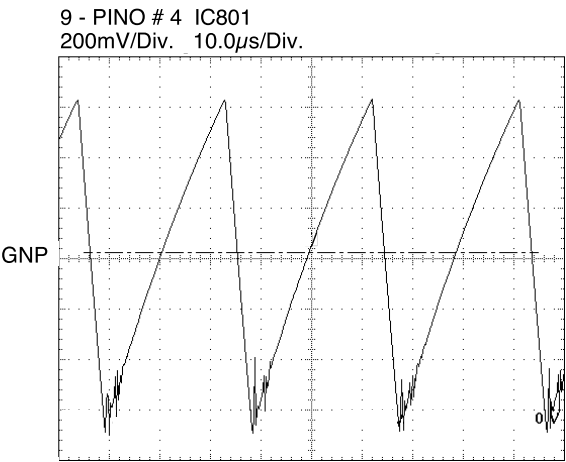
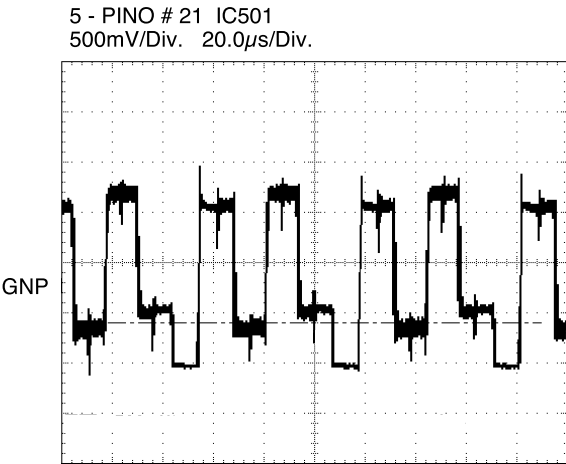
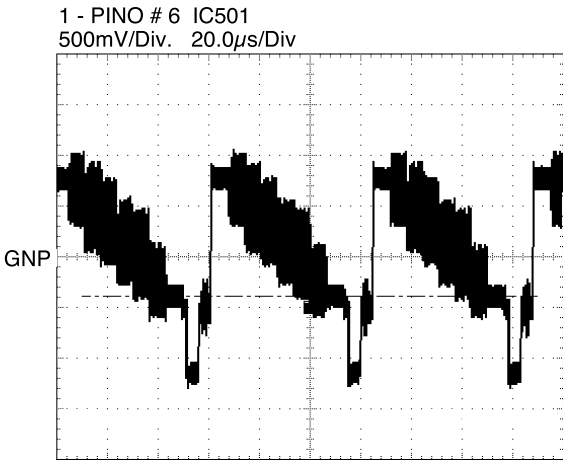
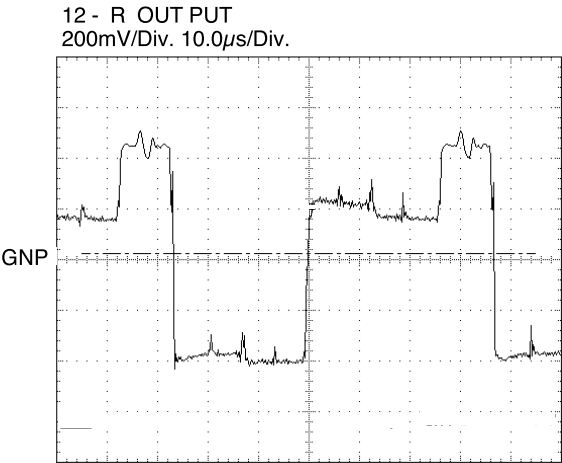
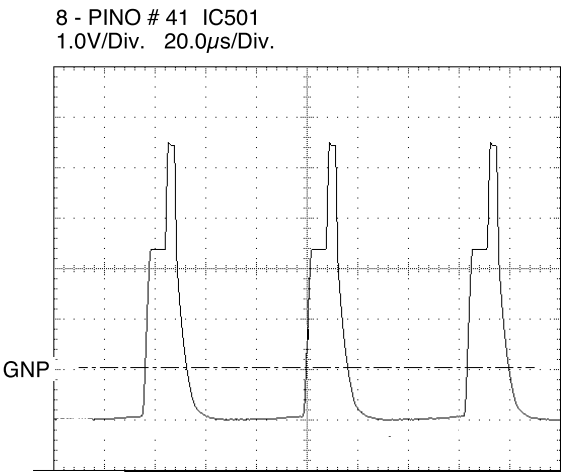
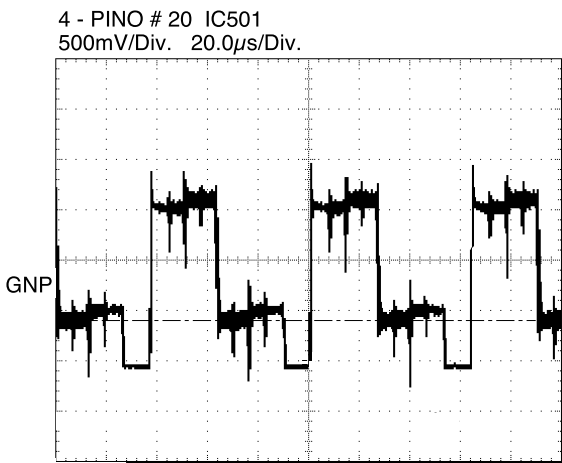
CONTR.MAX

BRIGHT - 50%

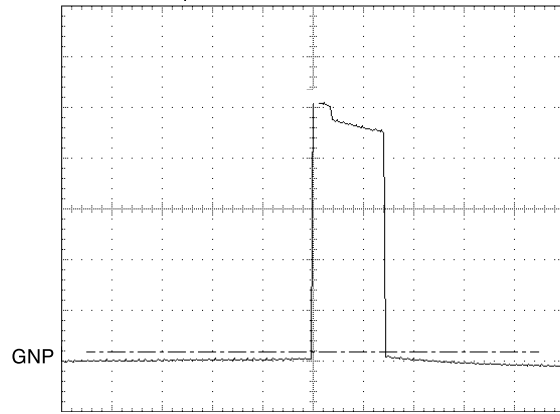
COLOR - 30%

SHARP - 50%

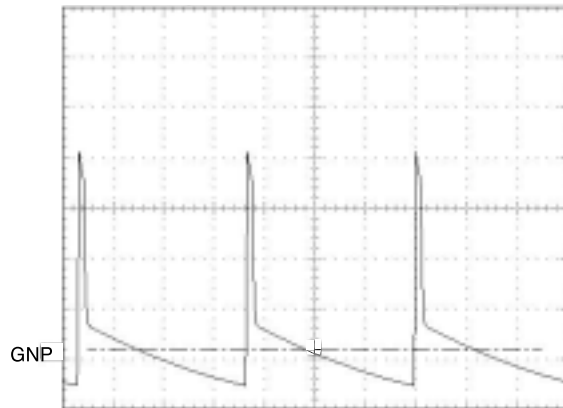
1h



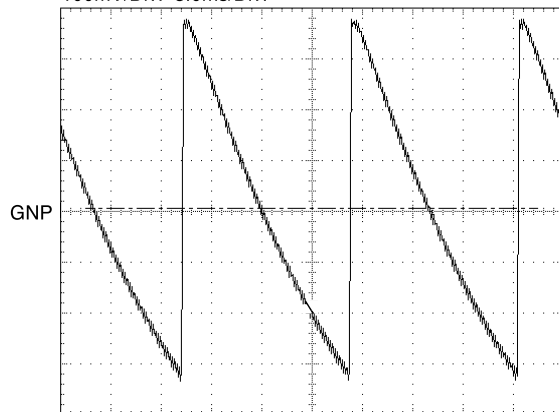
16 - PINO # 16 IC401
5.0V/Div. 500 μ s/Div.



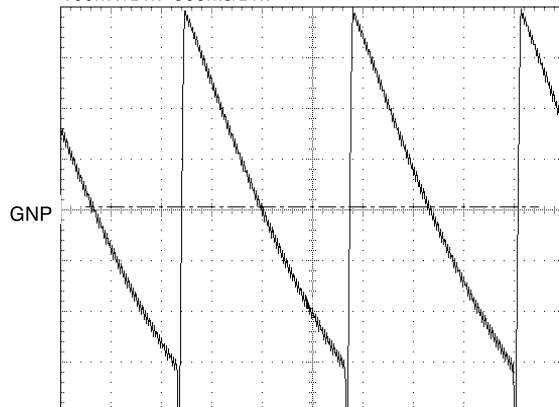
17 - PINO # 5 IC301
10.0V/Div. 5.0ms/Div.



18 - PINO # 1 IC301
100mV/Div. 5.0ms/Div.



19 - PINO # 7 IC301
100mV/Div. 500ms/Div.



VOLTAGE CHARTS

IC301

PIN#	VOLTAGE (V)
1	0.5
2	12.8
3	-10.4
4	-11.8
5	0.082
6	13
7	0.5

IC601, IC602

PIN#	VOLTAGE (V)
1	0
2	5.7
3	14.9
4	11.9
5	1.1
6	6.6
7	3.4
8	2.8
9	0

IC603

PIN#	VOLTAGE (V)
1	3.6
2	2.4
3	3.6
4	1.3
5	2.5
6	0
7	0
8	0
9	0
10	5
11	0
12	3.6
13	3.6
14	2.4
15	2.4
16	4.9

IC501

PIN#	VOLTAGE (V)	PIN#	VOLTAGE (V)
1	0	29	0
2	3.6	30	2.2
3	0	31	2.2
4	0	32	2.2
5	2.5	33	0
6	3	34	2.4
7	4.4	35	2.4
8	4.4	36	4.6
9	6.6	37	8
10	1.4	38	2.4
11	3.3	39	4.9
12	8.1	40	1.2
13	3.7	41	0.6
14	0	42	3.1
15	3	43	3.9
16	1.5	44	-2.2
17	3.3	45	0
18	5.9	46	05
19	3.0	47	06
20	3.0	48	4.6
21	3.0	49	4.6
22	3.0	50	1.9
23	1.9	51	3.8
24	0	52	3.8
25	0	53	4.4
26	0	54	0.9
27	2.7	55	2.8
28	2.7	56	0

IC604

PIN#	VOLTAGE (V)	PIN#	VOLTAGE (V)
1	2.9	27	3.5
2	2	28	0
3	3.6	29	3.4
4	0	30	3.5
5	3.5	31	3.6
6	0	32	3.5
7	0		
8	4.4		
9	4.4		
10	8.5		
11	3.5		
12	8.5		
13	3.5		
14	3.6		
15	3.5		
16	2.9		
17	5.4		
18	3.6		
19	3.5		
20	3.5		
21	3.6		
22	3.6		
23	3.6		
24	3.6		
25	3.5		
26	3		

IC701

PIN#	VOLTAGE (V)	PIN#	VOLTAGE (V)
1	0	27	6
2	0	28	4.9
3	3	29	4.9
4	0	30	4.9
5	0	31	4.9
6	0	32	4.9
7	0	33	0
8	0	34	0
9	0	35	2.4
10	0	36	2.2
11	0	37	1
12	0	38	4.9
13	0	39	0
14	0	40	-
15	0	41	0
16	0	42	4.9
17	4.9	43	0
18	4.9	44	4.9
19	0	45	2.7
20	0	46	4.9
21	4.9	47	0
22	4.9	48	0
23	0	49	0
24	4.9	50	4.9
25	4.9	51	4.9
26	4.9	52	0

IC702

PIN#	VOLTAGE (V)
1	0
2	0
3	0
4	0
5	5
6	5
7	0
8	5

IC703

PIN#	VOLTAGE (V)
1	5
2	0
3	5

IC801

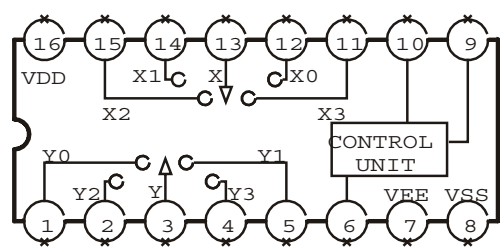
PIN#	VOLTAGE (V)
1	2.5
2	0
3	0
4	2.39
5	1.95
6	3.6
7	18
8	5

IC901

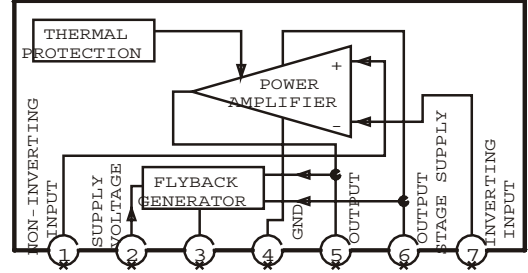
PIN#	VOLTAGE (V)
1	2.9
2	2.8
3	3
4	0
5	6
6	175
7	101
8	115
9	115

IC BLOCK DIAGRAMS

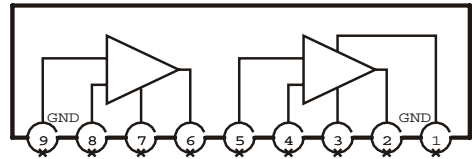
IC, HEF4052



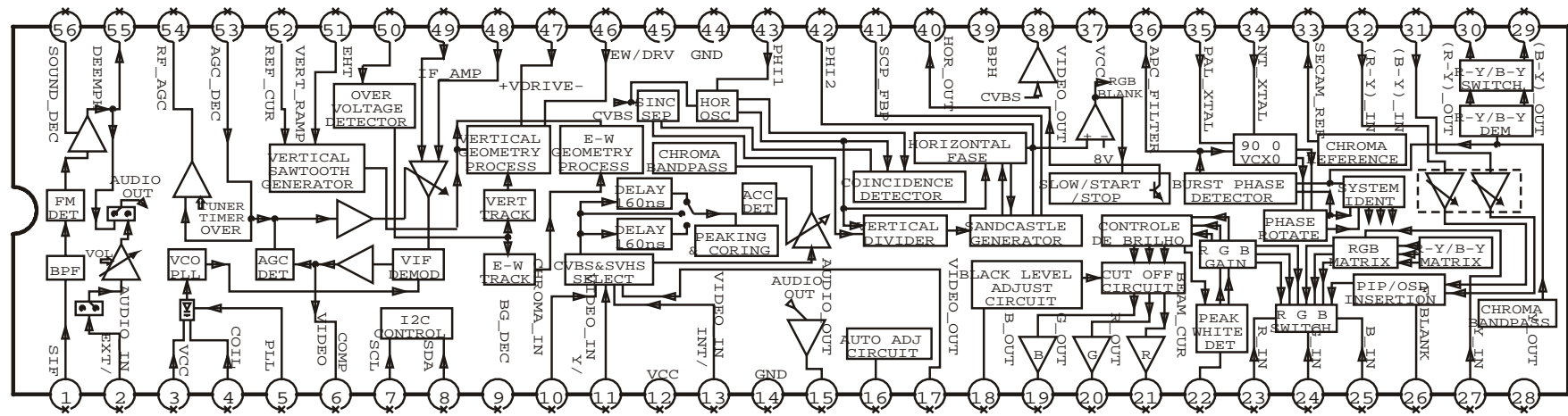
IC, TDA9309



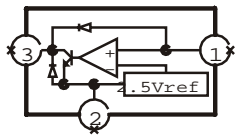
IC, TDA1013B



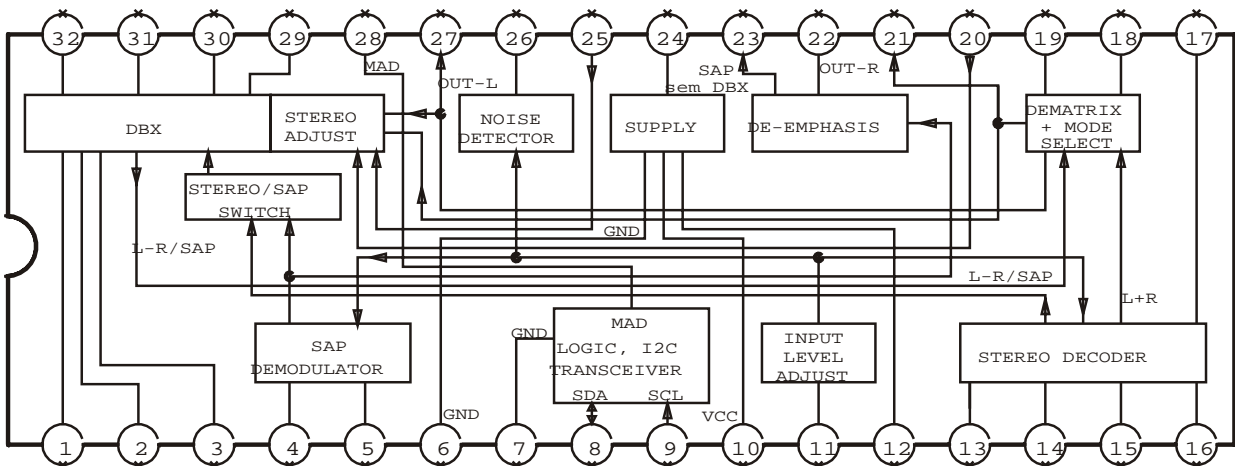
IC, TDA8841



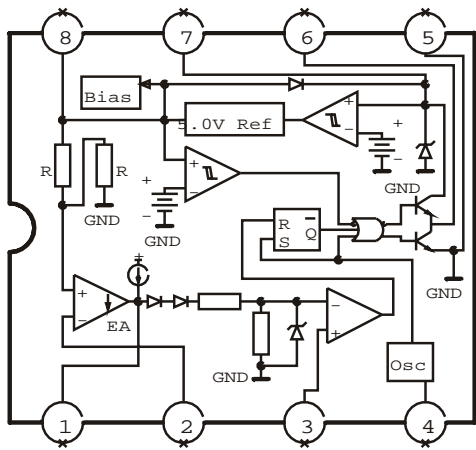
IC, TL431



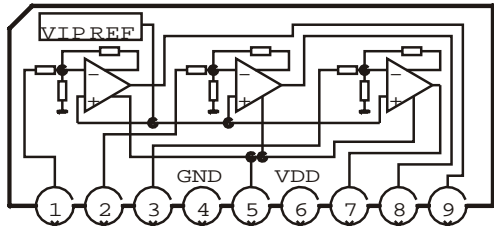
IC, TDA9850



IC, UC3842B



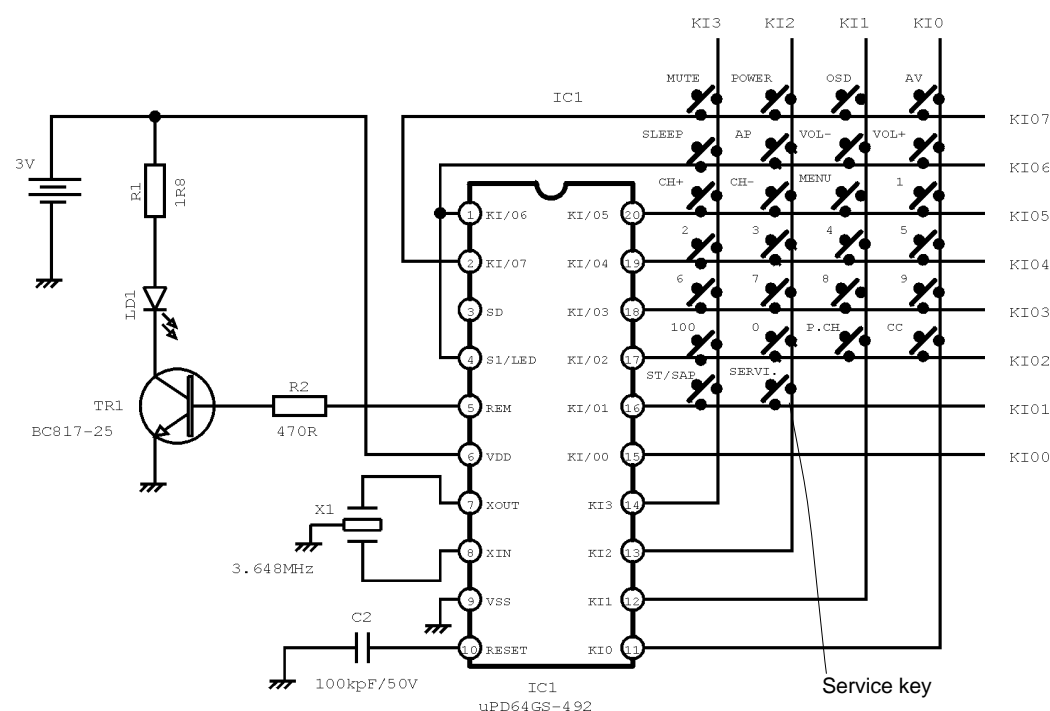
IC, TDA6107Q/N1



It is necessary to pre-heat the TV during 15 minutes, before its calibration.

- ### How to select the **FACTORY MODE**

- Connection SW between pin13 and 16 of the IC: Pressing the SW will display the test mode screen on TV.



- Note:** All the adjustment options can be selected directly by the remote control numeric keys.

- d)** To exit the FACTORY MODE, use the key **OSD/OUT** of the remote control.

1.2 *The positioning of the TV set should obey the magnetic parameters of South America that it is -120 vertical mG. In the practice, this is gotten with a relative precision, positioning the TV set with the face (screen) of the CRT pointing to the geographical East.*

Description of service and factory registers

After replacing EEPROM (IC702), set to the reference adjustment value, and them perform.

Nota:

* Estes ajuste não devem ser alterados em hipótese nenhuma, caso isto ocorra a EEPROM deverá ser inicializado novamente (Selecione e execute o registrador 39).

Initial conditions about some features after reset are: DSC off, Portuguese to language, blue background off and Closed Caption off.

Binary description about some registers:

Register 20 (BIT)		
BIT		Description
Bit0	Not-used	Not used
Bit1	HBL	Normal Blanking
Bit2	IFS	IF Sensitive
Bit3	COR	Noise coring
Bit4	EVG	Vertical guard
Bit5	STM	Search tuning mode
Bit6	LBM	Blanking mode
Bit7	VID	Video ident mode

Register 21 (OP1)		
BIT		Description
Bit0	-	Force vertical in 60Hz (Automatic Programming)
Bit1	-	Stereo menu (AV mode)
Bit2	FOA	Phase timing const. #1
Bit3	FOB	Phase timing const. #2
Bit4	BCO	ON/OFF behavior
Bit5	-	Aiwa indication
Bit6	POC control.	POC control ⇒ POC off=1
Bit7	Not used	Not used

Register 22 (OP2)		
BIT		Description
Bit0	-	Field indicator is inverted or no
Bit1	-	Field selection to 50 Hz
Bit2	-	Field selection to 60 Hz
Bit3	VPD	VPD Vertical Pulse Delay
Bit4	PW0	PW0 vertical sync Pulse Width 0
Bit5	PW1	PW1 vertical sync Pulse Width 1
Bit6	VR0	VR0 Voltage Reference 0
Bit7	VR1	VR1 Voltage Reference 1

Register23 (OP3)		
BIT		Description
Bit0	-	C.C initial pos. set 0 – 60Hz
Bit1	-	C.C initial pos. set 1 – 60Hz
Bit2	-	C.C initial pos. set 2 – 60Hz
Bit3	-	C.C initial pos. set 3 – 60Hz
Bit4	-	C.C initial pos. set 0 – 50Hz
Bit5	-	C.C initial pos. set 1 – 50Hz
Bit6	-	C.C initial pos. set 2 – 50Hz
Bit7	-	C.C initial pos. set 3 – 50Hz

VPD	
0	VSYNC input is delayed by 8 to 24 μ s before field detection
1	VSYNC input is not delayed

VR1	VR0	Nominal Bias
0	0	3.12 V
0	1	2.98 V
1	0	2.84 V
1	1	2.70 V

PW1	PW0	Pulse Width
0	0	8 μ s
0	1	10 μ s
1	0	12 μ s
1	1	14 μ s

Note:

The **register 22 (OP2)** is used to make adjustment about some Closed Caption parameters in the microcontroller.

The **register 23 (OP3)** is used to make vertical positioning of Closed Caption in the microcontroller.

Register24 (OP4):

This register has CC line number - (Low nibble to 60Hz and high nibble to 50Hz)

The Bits 0,1,2,3 are used to select the line where Closed Caption information will be extracted when in 60Hz, and the bits 4, 5, 6, 7 are used to select the line where Closed Caption information will be extracted when in 50Hz

Note:

This information is used by microcontroller.

Register2 5 (OP5)		
BIT		Description
Bit0	-	Horizontal Delay 0
Bit1	-	Horizontal Delay 1
Bit2	-	Horizontal Delay 2
Bit3	-	Horizontal Delay 3
Bit4	-	Not used
Bit5	-	Not used
Bit6	-	Not used
Bit7	-	Not used

Register 16 (CTRL2)		
BIT		Description
Bit0	BB	Blue back off
Bit1	CS0	2 nd CVBS output
Bit2	CS1	2 nd CVBS output
Bit3	BKS	Black Stretch mode
Bit4	BLS	Blue Stretch mode
Bit5	CB	Chroma band pass freq.
Bit6	VSD	Vertical scan active
Bit7	OSC	Switch off in vertical overscan

Note:

*The **register25 (OP5)** is used to make horizontal positioning of Closed Caption in the microcontroller.. Forced color on.*

Register 17 (CTRL3)		
BIT		Description
Bit0	CL0	Cathode driver level
Bit1	CL1	Cathode driver level
Bit2	CL2	Cathode driver level
Bit3	AST	Automatic mode
Bit4	CMB	Ext. comb filter on/off
Bit5	ACL	Automatic color limit
Bit6	BPS	By pass delay line
Bit7	HOB	Output blanking

Register 18 (CTRL4)		
BIT		Description
Bit0	EBS	Extend Blue Stretch
Bit1	FFI	Fast filter IF PLL
Bit2	DSA	Dynamic skin control angle
Bit3	DS	Dynamic skin control
Bit4	ID0	Y delay adjustment
Bit5	ID1	Y delay adjustment
Bit6	ID2	Y delay adjustment
Bit7	ID3	Y delay adjustment

Register 19 (CTRL5)		
BIT		Description
Bit0	FCO	

3. Geometry of the Image

a) Using the PM - 5515 generator, apply the crosshatch pattern with circle.

b) Adjust the following items:

Vertical slope (VSI);

Height (VAm);

Vertical position (VSh);

Center Linearity (VSc);

Horizontal position (HSh)

Adjust the above items, until obtaining the best circle symmetry and positioning, as well as the minor image geometric distortion.

4. **White balance**

Note:

The cut point doesn't need adjustment, because it's automatically made by the IC501.

The white adjustment is already pre-adjusted and incised in the IC501 and, thus, its adjustment is not necessary.

Otherwise, if it is necessary to change the temperature of the white pattern, proceed in the following way:

- a) Enter in the service mode.
- b) Select via **CH**▲ or **CH**▼ the WPR (09), WPG (10) and WPB (11) functions.
- c) Increase or decrease the function via **VOL**➤ or via ◀**VOL** respectively.

5. **Screen adjustment**

- a) Select the register 41 (Scr).
- b) Press **VOL**➤ to access and adjust the screen control localized on the FBT, until the horizontal line be slightly visible on the screen center.

6. **AGC adjustment**

- a) Select the register 12 (AGC)
Apply a PHILIPS pattern with 60dB μ V of intensity and adjust the delay until obtain 3.5V in AGC pin of tuner.



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